JRPP No.	2011HCC006
DA No.	DA10/1770
Proposal	Environmental upgrade works involving changes to pond drainage systems
Property	LOT: 5 and 7 DP: 233520, Nos. 2/434 & 1/434 SANDGATE RD,SHORTLAND LOT: 12 DP: 1149782 ,No. 3/434 SANDGATE RD,SHORTLAND LOT: 100 DP: 1134395 ,No. 4/434 SANDGATE RD,SHORTLAND LOT: 34 DP: 1118647 ,No. 1/2 ASTRA ST,SHORTLAND LOT: 452 DP: 622209, No. 24 MORT ST,SHORTLAND
Applicant	Hunter Wetlands Centre Australia
Report By	Melissa Thomas - Senior Development Officer (Planning)
Checked by	Geof Mansfield - Development and Building Co-ordinator

Assessment Report and Recommendation

Executive Summary

Proposed Development

The Environmental Impact Statement submitted in support of the application outlines the objectives of the proposal, being to improve the hydrology and water quality of waterbodies on the site. The project has been separated into two separate management strategies, as detailed below:

Strategy A -

The management of the water level and water quality in the Melaleuca Swamp. The management of the Melaleuca Swamp is proposed in response to signs of stress and degradation due to prolonged periods of inundation, given that seasonal cycles of wetting and drying have been prevented due to changes that have occurred on the site. This strategy involves the active transfer of water on an annual basis between the Melaleuca Swamp and a Melaleuca plantation located immediately north.

Strategy B

Water level control throughout all of the ponds on site. This strategy is aimed at reversing the trend towards progressively higher water levels within the wetland ponds as a consequence of the proliferation of Phragmites and sedimentation within the main drainage outlet of the site. This is proposed to be achieved by improving the efficiency of surface water drainage from the site by establishing a formal connection between Reed Marsh and the Canoe Channel and re-establishing a historical drainage channel through Ironbark Marsh discharging into Ironbark Creek, both of which are to be pro-actively managed through control of outlet invert levels.

Referral to Joint Regional Planning Panel

Pursuant to the requirements of State Environmental Planning Policy (Major Development) 2005, the application is referred to the JRPP for determination as the development is 'designated development' under the provisions of State Environmental Planning Policy 14 - Coastal Wetlands.

Permissibility

The site is located within the 2(a) Residential Zone and 7(b) Environmental Protection Zone under the Newcastle Local Environmental Plan 2003. The proposal is categorised as a 'Environmental Protection Works' and is permissible within the 2(a) Residential and 7(b) Environmental Protection Zones subject to development consent. All required owner(s) consent has been provided. The proposal is designated and integrated development.

Consultation

The proposal was notified in accordance with the requirements of 'Designated Development' and 'Advertised Development' as specified by the Environmental Planning and Assessment Regulation 2000. No public submissions were received in relation to the proposal.

Key Issues

The main issues identified in the assessment were as follows:

- Whether the development would have an adverse impact on the natural environment.
- Whether the development would have an adverse impact on the amenity of the adjacent residential area.

Recommendation

Grant approval to DA-10/1770 - Environmental upgrade works involving changes to pond drainage systems at No.434 Sandgate Road, 1/2 Astra Street and 24 Mort Street Shortland subject to conditions contained in Appendix A.

1. Background

The site is a wildlife sanctuary and a 'Ramsar' listed wetland. Hunter Wetlands Centre Australia (HWCA) was initiated in 1986 to rehabilitate a degraded wetland and to increase understanding and appreciation of wetlands through education and awareness.

The Environmental Impact Statement (EIS) provides the following background information in relation to the proposal:

> *'The wetlands are based around a series of ponds, containing a range of hydrological characteristics and vegetation types. Although historically part of a shallow estuarine swale that was connected to the Hunter River through Ironbark Creek, the wetlands are now entirely freshwater environments. The hydrology of the ponds, and the wetlands in general, has been the main driver for changes for changes to the ecology of the site over the past few decades.*
>
> *As a consequence of past changes and present development and management practices, the wetlands are now subjected to a number of hydrology based issues that need to be managed, including:*
>
> - *Volumetric and nutrient runoff from surrounding urban land and historical fill;*
> - *Public safety issues from algae, blue-green algae and Azolla blooms;*
> - *Artificially high water levels throughout the wetlands*
> - *Poor water quality associated with long residence time of nutrient rich water within the wetlands; and*
> - *A progressively degrading Melaleuca swamp forest, which is identified as an Endangered Ecological Community.*
>
> *The objective of the…project is to manage the above issues and this increase the ecological value of the wetlands.'*

2. Site and Locality Description

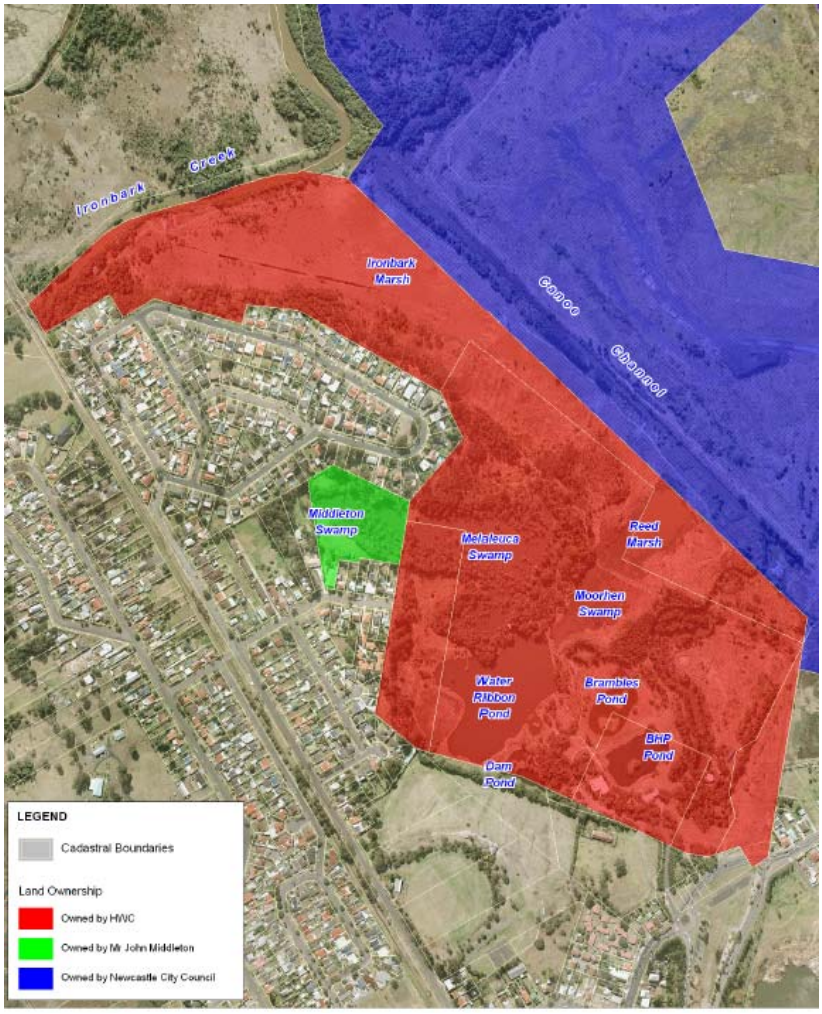
The HWCA is located within the suburb of Shortland approximately 10 kilometres west of the Newcastle CBD. The HWCA site which apply to the proposal comprises:

- LOT: 5 DP: 233520,2/434 SANDGATE RD,SHORTLAND
- LOT: 7 DP: 233520,1/434 SANDGATE RD,SHORTLAND
- LOT: 12 DP: 1149782 ,3/434 SANDGATE RD,SHORTLAND
- LOT: 100 DP: 1134395 ,4/434 SANDGATE RD,SHORTLAND

Given the nature of the proposal, being changes to hydrology, the proposed works are not limited to the land owned by the HWCA, and the following additional adjoining properties are included in the application:

- LOT: 34 DP: 1118647 ,1/2 ASTRA ST,SHORTLAND
- LOT: 452 DP: 622209,24 MORT ST,SHORTLAND

The HWCA site covers an area of approximately 45 hectares and is surrounded by the residential areas of Shortland to the west, Sandgate Road and Newcastle Wetlands Reserve to the south-east, Ironbark Creek and Hexham Swamp to the north and north-west, and a disused rubbish tip to the north.



Source: Environmental Impact Statement: Hunter Wetlands Centre Hydrological and Ecological Restoration prepared by BMT WBM.

3. Project Description

The Environmental Impact Statement outlines the objectives of the proposal, being to improve the hydrology and water quality of waterbodies on the site. The project has been separated into two separate management strategies, as detailed below:

> Strategy A - The management of the water level and water quality in the Melaleuca Swamp

The management of the Melaleuca Swamp is proposed in response to signs of stress and degradation due to prolonged periods of inundation, given that seasonal cycles of wetting and drying have been prevented due to changes that have occurred on the site. This strategy involves the active transfer of water on an annual basis between the Melaleuca Swamp and the Melaleuca plantation located immediately north. The pumping of the nutrient-rich water from Melaleuca Swamp will aid in the natural cycle of the wetland. The pumping is proposed to be carried out annually, during January, for a period of two to three weeks. The water will be distributed to the Melaleuca Plantation through a percolating hose network and the Melaleuca Swamp would be drained until most of the bed is exposed.

The EIS advises:

> *'Water from Melaleuca Swamp would be directed to the plantation area whereby infiltration though the soil would irrigate and effectively fertilise the plantation due to high nutrient levels in the discharge water. Any water not utilised by the plantation would contribute to groundwater seepage and groundwater flows towards Ironbark Marsh situated to the north of the plantation area. Groundwater seepage would have a significantly reduced nutrient load due to the nutrient uptake by the Melaleuca seedlings in the plantation. In addition, any surface water that does not infiltrate the soil would flow as overland flow into Ironbark Marsh and Reed Marsh. However, in order to limit the possibility of soil erosion within the plantation, it is considered beneficial to restrict the amount of overland flow by controlling the pumping rate from Melaleuca Swamp.'*
>
> Strategy B - Water level control throughout all of the ponds on site.

This strategy is aimed at reversing the trend towards progressively higher water levels within the wetland ponds as a consequence of the proliferation of Phragmites and sedimentation within the main drainage outlet of the site. This is proposed to be achieved by improving the efficiency of surface water drainage from the site by establishing a formal connection between Reed Marsh and the Canoe Channel and re-establishing a historical drainage channel through Ironbark Marsh discharging into Ironbark Creek, both of which are to be pro-actively managed through control of outlet invert levels. A flow control system will be installed between Reed Marsh and the adjacent section of Canoe Channel to enable surface water from upstream water bodies to bypass Ironbark Marsh and discharge directly into Canoe Channel. Tidal flap gates would also be maintained to prevent saline intrusion.

The EIS advises:

> *'Given the high degree of connectivity between ponds, the water levels are largely controlled by the downstream pond water level. Water levels within Reed Marsh are therefore the main control for water levels within all upstream ponds.*
>
> *Water levels within Reed Marsh are influenced by the ability of surface water within Reed Marsh to drain to Ironbark Creek. Given that drainage is primarily through the relatively long and overgrown Ironbark Marsh, there is considerable resistance to surface flow draining from Reed Marsh.*
>
> *Over the past 50 years or so, Ironbark Marsh has changed from mostly saltmarsh to dense Phragmites, which has impeded surface water drainage, despite the presence of a historical agricultural drain through some sections of the marsh. Consequently, water levels within Reed Marsh, and subsequently across all the connected wetland ponds, have slowly increased. It is anticipated that drainage through Ironbark Marsh has also been inhibited by sedimentation within the marsh area, given the expansion and slowing of flows as they travel between Reed Marsh and Ironbark Creek.'*
>
> '*A drainage channel would be excavated through Ironbark Marsh, from Reed Marsh to the existing discharge pipes at Ironbark Creek. From some of the length of this channel, the works would simply involve reinstating a relic agricultural drain, thus minimising excavation and disturbance….*
>
> *In addition, a flow control structure would be installed between Reed Marsh and the adjacent section of Canoe Creek…The flow control structure would enable surface water from upstream water bodies to bypass Ironbark Marsh and discharge directly into Canoe Channel, thereby significantly increasing the potential drainage rate from*

the wetlands. The connection would take advantage of existing 3x300mm culverts and flap gates under the Transgrid access track, which at present, drains local runoff from the track only.

Tidal flap gates are also presently located on the downstream side of the large drainage channel discharge into Ironbark Creek at the western end of Ironbark Marsh. These flap gates are in place to prevent saline intrusion from Canoe Channel and Ironbark Creek into the HWC site. These flap gates would be maintained in order to retain the freshwater environment of HWC.

A small drainage connection would be constructed to link Reed Marsh with the Canoe Channel via the existing concrete pipes. The drainage connection would require excavation of a section of the existing bund that separates Reed Marsh from the access track, construction of a new earth channel through the excavated section of the bund, and in-situ construction of a new drop board flow control structure at the downstream end of the earth channel.

Controlled release of surface water contained within Reed Marsh would be carried out in accordance with a Site Hydrology Operations Management Plan.'

The Site Hydrology Operations Management Plan would establish guidelines for managing site hydrology and water quality into the future. The intention of the HWCA Site Operations Management Plan is to address the following:

- Determine the sustainable pumping periods and application rates required to drain the Melaleuca Swamp whilst demonstrating compliance with the Protection of the Environment Operations Act 1997 (POEO Act)
- Management of odour impacts
- Management of water levels in Water Ribbon Pond
- Determine water quality triggers and environmental conditions that would trigger changing the management strategies
- Detail a maintenance program that will ensure the pump, distribution system and flow control structures are operating as required.

4. Consultation

The proposal was notified in accordance with the requirements of 'Designated Development' and 'Advertised Development' as specified by the Environmental Planning and Assessment Regulation 2000. The application was publicly exhibited in accordance with Newcastle Development Control Plan 2005 from 17 January 2011 to 18 February 2011. In response to public exhibition no public submissions were received.

5. Referrals

State Environmental Planning Policy 14 - Coastal Wetlands referrals

The following referrals were made pursuant to State Environmental Planning Policy 14 - Coastal Wetlands:

- Department of Planning
- Department of Environment, Climate Change and Water (DECCW)

Concurrence from the Director-General of the Department of Planning, as required under SEPP 14, was given on 12 April 2011.

In relation to the response from DECCW, comments were made concerning the proposal and whether aspects would require the obtaining a pollution licence under the POEO Act.

With respect to the pollution of waters, DECCW states that the proposal does not appear to be scheduled under the POEO Act. However, DECCW highlights that the proposal has the potential to discharge high concentrations of nutrients and algae from Reed Marsh into the Canoe Channel, and from Melaleuca Swamp onto the Melaleuca Plantation, both of which may be considered to constitute pollution of waters under the POEO Act.

DECCW has discretionary power to grant a licence in respect of non-scheduled activities, which would provide a defence in respect of the pollution of waters. However, DECCW considers that practical measures could be implemented to prevent the pollution of waters, and has indicated that given these circumstances such a license is unlikely to be granted for the proposal.

DECCW recommends that the project should be designed and undertaken to ensure that the pollution of waters does not occur. As such, prior to carrying out the project, HWCA would need to prepare an Operations Management Plan (OMP) for the Project. The OMP would contain operational protocols for both rehabilitation strategies that will enable HWCA to complete the activities without committing an offence under the POEO Act.

A copy of the responses received is attached at APPENDIX C – Referral Comments.

Integrated Development referrals

The proposal involves works requiring a 'Controlled Activity Approval' under the Water Management Act , 2000 and therefore constitutes 'integrated development' under the Environmental Planning and Assessment Act, 1979 (as amended). In this regard, General Terms of Approval were issued by the NSW Office of Water which is attached at APPENDIX C – Referral Comments.

Designated Development referrals

The following referrals were sent pursuant to *Clause 77 (Notice of application for designated development to public authorities (other than concurrence authorities and approval bodies))* of the Environmental Planning and Assessment Regulation 2000:

- Department of Environment, Climate Change and Water - refer to above comments
- Aquatic Habitat Protection Unit of Industry and Investment - no objections raised in relation to the proposal
- Roads and Traffic Authority - no objections raised in relation to the proposal
- Energy Australia - no objections raised in relation to the proposal
- Local Aboriginal Land Council - no comments received
- Hunter Water Corporation - no comments received
- Transgrid - Comments received regarding conditions requested relating to infrastructure in the vicinity

In relation to the comments made from Transgrid, it is noted that high voltage transmission lines (owned and operated by Transgrid) are located along the north and north western boundary of the HWCA site adjacent to Ironbark Marsh and Canoe Channel. Stanchions that hold the transmission lines are positioned on raised pads with a surface level above that of the surrounding wetland ground levels. Maintenance of the transmission lines and stanchions occurs via an unsealed access track that runs along the north western boundary of the site adjacent to the transmission line route.

The EIS states that the nature of the project is such that no impacts upon the existing infrastructure (including Transgrid assets) on site are expected. In response to concerns raised by Transgrid regarding the proposal, the applicant has advised that the requirements of Transgrid will be met.

A copy of the response received is attached at APPENDIX C – Referral Comments.

Internal referrals

The following referrals were made:

- Environmental Services - the proposal was considered to be acceptable subject to conditions
- Stormwater/Flooding Engineering - no objections raised in relation to the proposal

A copy of the response received from Environmental Services (Compliance) is attached at APPENDIX C – Referral Comments.

6. Section 79C Considerations

(a)(i) the provisions of any environmental planning instrument

State Environmental Planning Policy 14 - Coastal Wetlands (SEPP14)

The proposal is deemed to be a 'designated development' under SEPP14 for which an Environmental Impact Statement is required. Under this SEPP, concurrence from the Director-General of the Department of Planning is required for the proposal. In this regard concurrence was given on 12 April 2011.

State Environmental Planning Policy 71 - Coastal Protection

The site is identified within the coastal zone, and is identified as a 'sensitive coastal location'. The proposal has been considered in accordance with Clause 8 - Matters for consideration, as detailed below:

Matter for consideration	Comment
(a) the aims of this Policy set out in clause 2,	The proposal is considered to be consistent with the aims of the policy.
(b) existing public access to and along the coastal foreshore for pedestrians or persons with a disability should be retained and, where possible, public access to and along the coastal foreshore for pedestrians or persons with a disability should be improved,	Not applicable.
(c) opportunities to provide new public access to and along the coastal foreshore for pedestrians or persons with a disability,	Not applicable.
(d) the suitability of development given its type, location and design and its relationship with the surrounding area,	The proposal is not likely to create any significant impacts.
(e) any detrimental impact that development may have on the amenity of the coastal foreshore, including any significant	The proposal is not likely to create any significant impacts.

overshadowing of the coastal foreshore and any significant loss of views from a public place to the coastal foreshore,	
(f) the scenic qualities of the New South Wales coast, and means to protect and improve these qualities,	The proposal is not likely to create any significant impacts.
(g) measures to conserve animals (within the meaning of the Threatened Species Conservation Act 1995) and plants (within the meaning of that Act), and their habitats,	The proposal is not likely to create any significant impacts, as demonstrated by the flora and fauna assessment contained in the EIS.
(h) measures to conserve fish (within the meaning of Part 7A of the Fisheries Management Act 1994) and marine vegetation (within the meaning of that Part), and their habitats *(i) existing wildlife corridors and the impact of development on these corridors,* *(j) the likely impact of coastal processes and coastal hazards on development and any likely impacts of development on coastal processes and coastal hazards,*	The proposal is not likely to create any significant impacts. The proposal was referred to the Aquatic Habitat Protection Unit of Industry and Investment who raised no objections raised in relation to the proposal
(k) measures to reduce the potential for conflict between land-based and water-based coastal activities,	The proposal is not likely to create any significant impacts.
(l) measures to protect the cultural places, values, customs, beliefs and traditional knowledge of Aboriginals,	The proposal is not likely to create any significant impacts, as demonstrated by the assessment contained in the EIS.
(m) likely impacts of development on the water quality of coastal waterbodies,	The proposal is not likely to create any significant impacts, as demonstrated by the assessment contained in the EIS.
(n) the conservation and preservation of items of heritage, archaeological or historic significance,	The proposal is not likely to create any significant impacts, as demonstrated by the assessment contained in the EIS.
(o) only in cases in which a council prepares a draft local environmental plan that applies to land to which this Policy applies, the means to encourage compact towns and cities,	Not applicable.
(p) only in cases in which a development application in relation to proposed development is determined: *(i) the cumulative impacts of the proposed development on the environment, and* *(ii) measures to ensure that water and energy usage by the proposed development is efficient.*	The proposal is not likely to create any significant impacts.

State Environmental Planning Policy (Major Development) 2005

Pursuant to the requirements of State Environmental Planning Policy (Major Development) 2005, the application is referred to the JRPP for determination as the

development is 'designated development' under the provisions of State Environmental Planning Policy 14 - Coastal Wetlands.

State Environmental Planning Policy 55 - Remediation of Land

The proposed drainage channel between Reed Marsh and the existing drainage connection is located near a disused rubbish tip. The HWCA site also contains fill material from previous filling practices. Soil sampling was undertaken in the area of the proposed drainage channel. Soil sampling revealed no elevated levels of contaminants within the drainage channel development footprint. Therefore, the project is not expected to result in the disturbance or removal of any contaminated material.

Newcastle Local Environmental Plan 2003 (NLEP)

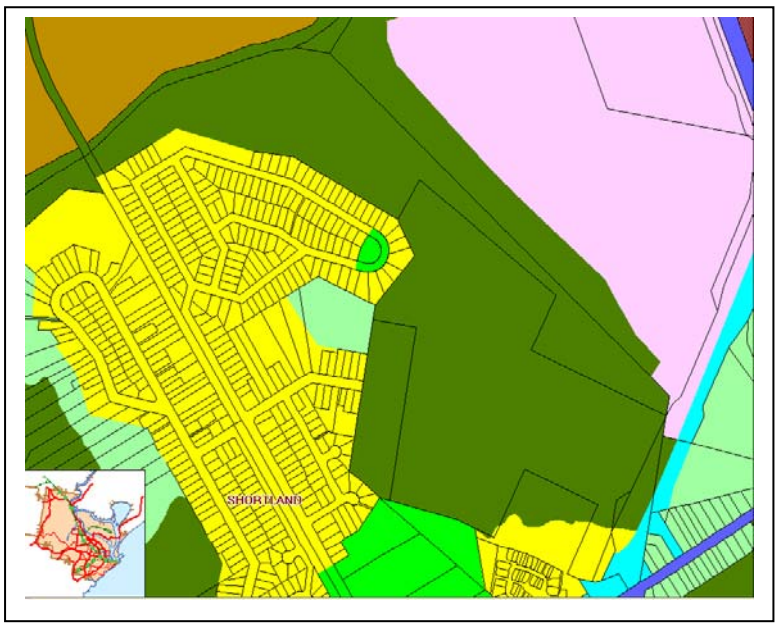
The proposal has been considered in accordance with the provisions of the NLEP, as detailed below:

- Clause 16 - Zonings

The site is located within the 2(a) Residential Zone and 7(b) Environmental Protection Zone under the Newcastle Local Environmental Plan 2003 (refer to below map). The proposal is categorised as a 'Environmental Protection Works', which is defined as:

> *' any work associated with the rehabilitation of land towards its natural state or any work to protect land from environmental degradation, and includes bush regeneration works, wetland protection works, erosion rehabilitation works, erosion protection works, dune restoration works, dune protection works and the like.'*

Accordingly, the proposal is permissible subject to development consent. All required owner(s) consent has been provided.



- Clause 25 - Acid Sulfate Soils

The site is identified on Council's Acid Sulfate Soils Map as having Class 2 areas. Acid sulfate soils were identified within soil samples taken from Melaleuca Swamp at depths of between 150 to 300mm. However, excavation is not proposed within Melaleuca Swamp and actual acid sulfate soils would not be exposed beyond existing natural water level variability. Samples collected within the vicinity of the proposed drainage channel from Reed Marsh revealed acid sulfate soils were not present and were unlikely to result in acid water discharge. As a precautionary measure an Acid Sulfate Soil Management Plan (ASSMP) has been prepared. The ASSMP contains the following information:

- Management of acid water generated on site;
- Measures to remove or neutralize any potential acid sulfate soils
- Procedures and protocols for leachate and sediment control

The requirement for implementation of the ASSMP will be addressed by an appropriate condition of consent.

- Clause 26 - Bush fire prone land

Having regard to the nature of the proposal, it is considered that the proposal is acceptable in relation to bushfire.

(a)(ii) the provisions of any draft environmental planning instrument

Draft Newcastle Local Environmental Plan 2011

Accordingly to the Draft Newcastle Local Environmental Plan 2011 (NLEP2011), the subject property is identified as being within the R2 Low Density Residential Zone and E2 Environmental Conservation Zone. Under the draft NLEP 2011, the Project is defined as 'Environmental Protection Works' based on the definition of protection works being:

> *'works associated with the rehabilitation of land towards its natural state or any work to protect land from environmental degradation, and includes bush regeneration works, wetland protection works, erosion rehabilitation works, erosion protection works, dune restoration works, dune protection works and the like'*

The zoning descriptions contained in the draft NLEP 2011 indicate that development consent is not required for 'Environmental Protection Works' within land zoned E2. Nonetheless, State Environmental Planning Policy 14 overrides the NLEP and as such development consent for the Project is required.

(a)(iii) any development control plans

The relevant elements of the Newcastle Development Control Plan 2005 are discussed below:

- Element 3.1 - Public Participation

The proposal was notified in accordance with this element of the DCP and no public submissions were received.

- Element 4.2 - Contaminated Land Management

The proposed drainage channel between Reed Marsh and the existing drainage connection is located near a disused rubbish tip. The Hunter Wetlands Centre Australia site also contains fill material from previous filling practices. Soil sampling was undertaken in the area of the proposed drainage channel. Soil sampling revealed no elevated levels of contaminants within the drainage channel development footprint. Therefore, the project is not expected to result in the disturbance or removal of any contaminated material.

- Element 4.3 - Flood Management and Element 4.5 - Water Management

A Council engineer has reviewed the EIS and no objections are raised in relation to the proposal from a flooding and drainage perspective.

(a)(iiia) any planning agreement that has been entered into or any draft planning agreement that the developer has offered to enter into

Not applicable.

(a)(iv) any matters prescribed by the regulations

This land has been identified as being in the 'coastal zone' under the NSW Coastal Protection Act 1979. In this regard, the NSW Coastal Policy 1997 has been considered, and noting the objective of the proposal is to improve and enhance coastal habitats, the proposal is considered to be acceptable.

(b) the likely impacts of the development

Hydrology

The proposal would result in a significant change in the wetland hydrology on the site. It has been considered beneficial to have a method of controlling the hydrology of the site in order to have the ability to mitigate the potential impacts, for example a decrease in habitat suitability of Melaleuca Swamp for roosting bird populations as a result of insufficient water within the swamp.

In this regard, adjustable flow control structures at strategic locations will be installed. These structures would enable flow between different waterbodies, and flow between the wetlands and external waterways. Therefore, if a change in wetland hydrology is identified as a detrimental impact, then the invert level of the flow control structures could be modified to mitigate the impact. Adjustments of this nature would be undertaken in accordance with a Site Hydrology Operations Management Plan. This plan will outline the trigger levels for adjusting the flow control structures and pumping out of Melaleuca Swamp. The plan would consider the most appropriate time periods to drain Melaleuca Swamp based on meteorological conditions as well as environmental constraints and results of ongoing monitoring.

Environmental Impacts

The proposal has been assessed by a Council Environmental Protection Officer and is considered satisfactory subject to the recommended conditions of consent. The officer's detailed assessment is as follows:

Flora and Fauna

The proposed development has the potential to impact on threatened native fauna that have been identified within the vicinity of the HWCA site. Identified species include the Eastern Bentwing-bat (Miniopterus schreibersii oceanensis), Australasian Bittern (Botaurus poiciloptilus) and Magpie Goose (Anseranas semipalmata) The EIS has included an assessment of the potential impacts of the proposed development on the identified threatened species listed under the Threatened Species Conservation Act 1995 and found the proposed development is unlikely to result in significant impacts on any threatened species as the proposed works will not remove or modify any habitat potentially utilised by the individual threatened species. Furthermore, the proposed alterations to the hydrological flow are an effort to return the water regimes to conditions that more closely resemble the naturally occurring process. The return of a naturally occurring hydrological flow has the potential to benefit threatened species by native vegetation colonisation or expansion of habitat.

Melaleuca Swamp contains a vegetation assemblage that is considered to be Swamp Sclerophyll Forest, which is identified as an Endangered Ecological Community (EEC) under the Threatened Species Conservation Act 1995. Melaleuca Swamp is also a wetland considered under SEPP 14 - Coastal Wetlands. Melaleuca Swamp currently experiences a prolonged or permanent hydroperiod due to earthworks conducted on the site in the mid 1980s. The prolonged inundation of Melaleuca Swamp has contributed to seasonal blooms of algae and cyanobacteria as well as the death of Melaleuca quinquenervia trees. The permanent inundation has also impeded wetland plant regeneration from seeds and nutrient assimilation. The proposed works would facilitate better nutrient breakdown, germination and growth of wetland plants. Therefore, the proposed drainage of Melaleuca Swamp is unlikely to impact upon the EEC, due to no removal of vegetation, and may potentially benefit the vegetation community.

Melaleuca Swamp is an important conservation site due to the seasonal presence of various waterbirds. The proposed alterations to the existing hydrological pattern and associated changes to existing habitat raises concerns that a seasonally dry wetland may reduce the quality of the area for nesting by a number of migratory waterbird species. In order to prevent any disruption to nesting the draining of Melaleuca Swamp will not occur until after breeding has commenced and is well established in any year. This mitigation measure will be incorporated into an Operations Management Plan (OMP) and addressed by an appropriate condition of consent.

The proposed drainage channel from Reed Marsh traverses a coastal freshwater wetland, which is identified as an EEC under the Threatened Species Conservation Act 1995. However, a seven part test has demonstrated there will be no significant impact on this EEC as the proposed development will result in no reduction in habitat and the alterations to the water flow will resemble a more naturally occurring hydrological process. The OMP will include mitigation measures to manage volumes and pollutant loads within the wetlands and watercourses as a result of the proposed development.

Accordingly, it is considered that the proposed development is not likely to have any significant effect on threatened species, populations or ecological communities, or their habitats.

Water quality

The proposed pumping of Melaleuca Swamp has the potential to discharge high concentrations of nutrients and algae into the surrounding wetlands and watercourses. The discharge of nutrients and algae into a watercourse may potentially be considered pollution of waters under the POEO Act. The Second Addendum to EIS proposes to manage/prevent water pollution by preparing an OMP outlining the operational protocols for both rehabilitation strategies that will enable HWCA to complete the proposed activities without committing an offence under the POEO Act. The requirement for preparation and implementation of the OMP will be addressed by an appropriate condition of consent.

Environmental monitoring

The First Addendum to the EIS outlines a monitoring program which will be undertaken to assess and manage the impacts/success of the proposed hydrological changes. The monitoring program will encompasses monitoring not only from a hydrological/nutrient perspective, but includes potential (micro)biological and ecological changes in the wetland environment as well. The monitoring program will include baseline data (most of which had already been collected) and will be contained within the overall OMP.

Noise

Noise impacts with the proposed development relate primarily to the construction of the drainage channel and the draining of the Melaleuca Swamp using a portable pump. The construction of the drainage channel may generate potential noise impacts for existing residential dwellings located along Blanch Street. However, the distance of the proposed construction site to dwellings and short construction time (approximately four weeks) will reduce potential construction noise impacts and not significantly impact upon the existing acoustic environment.

Draining of the Melaleuca Swamp is proposed to be undertaken annually for a period of approximately 3 weeks. Draining of the Melaleuca Swamp will be conducted with a portable pump operating a maximum of 12 hours a day. The proposed pump is a quiet solution pump that limits pump operation noise to a level of 62dBA (at a distance of 7m). Due to the pump, when in use, being located a significant distance from dwellings no adverse noise impacts are expected.

Odour

The existing primary source of odour at the site is waste matter, from the roosting bird population located primarily around Melaleuca Swamp, entering the wetlands. The proposed draining of Melaleuca Swamp may result in potential short-term odour generation from exposure of sediment and release of anaerobic gases. To mitigate potential odour impacts the OMP will include a water level control strategy that minimizes the need for complete exposure of bottom sediments. The controlled exposure of sediment through water level

control will reduce odour in the short term and the project will result in an appreciable reduction in odour from Melaleuca Swamp in the long-term. The requirement for preparation of the water control strategy within the OMP and implementation over the course of the development will be addressed by an appropriate condition of consent.

Flooding

A Council engineer has reviewed the EIS and has no objections to the proposal from a flooding and drainage perspective.

Utilities

The proposal was referred to Energy Australia, Transgrid and Hunter Water. The responses received from these utility providers is discussed in the report. The proposal is considered to be acceptable subject to conditions.

Mosquito Management

According to the EIS, the proposal has the potential to increase mosquito populations during the period of refilling Melaleuca Swamp. However, it is identified that this increase would be offset by the potential decrease during draining and drying out of the Swamp.

The EIS has identified that the site is a minor contributor to the overall production of mosquitoes in the region; and therefore it is not considered that it is likely to be a significant issue. Mitigation measures are also discussed in the EIS.

Based on the information in the EIS, it is considered that this issue will be adequately managed.

Aboriginal Heritage

The Aboriginal Heritage Assessment for the HWCA site concluded that all areas proposed for impact had been investigated and the pedestrian survey undertaken had determined there to be no sites of significance located inside the immediate study area.

Based on the assessment in the EIS, it is considered that Aboriginal Heritage has been satisfactorily considered.

Social and Economic Impacts

It is expected that the proposal would increase the range of educational activities and options available to visitors to the site. The proposed development would not be likely to have any significant social or economic impacts in the locality.

(c) the suitability of the site for development

In terms of site constraints, the site is identified as bushfire prone land. It is considered that in the context of the existing development, that the proposal is satisfactory in relation to this issue. The site is not within a Mine Subsidence District. The site is not subject to any other known risk or hazard that would render it unsuitable for the proposed development.

It is not considered that the proposal will increase the risk of the proposal in relation to climate change.

This property is affected by the Hunter Estuary Wetlands Ramsar Listing as announced by the Federal Minister for Environment on 18 November 2002. The applicant has sought separate advice from the Commonwealth Department of Environment, Water, Heritage and the Arts (DEWH) regarding the Environmental Protection and Biodiversity Conservation Act 1999 (EPBC). DEWH have confirmed that the proposal is not a controlled action and as such does not require any further assessment or approval under the EPBC Act.

(d) any submissions made in accordance with this Act or the Regulations

No public submissions were received in relation to the proposal.

(e) the public interest

The proposed development is considered to be satisfactory having regard to the principles of ecologically sustainable development.

In relation to the imposition of Section 94A contributions, it is noted that according to Council's Section 94A Development Contributions Plan 2009, community facilities and educational establishments are exempt from the levy.

The proposed development does not raise any significant general public interest issues beyond matters already addressed in this report.

7. Conclusion

Subject to various conditions, the proposal is acceptable against the relevant considerations under section 79C.

8. Recommendation

That the Joint Regional Planning Panel grant consent to DA10/1770, subject to the conditions contained in Appendix A.

APPENDIX A - Conditions of Consent

A General Conditions

A1 The proposed development being carried out strictly in accordance with the details set out in the Environmental Impact Statement prepared by BMT WBM dated October 2010, First Addendum to Environmental Impact Statement prepared by BMT WBM dated January 2011 and Second Addendum to Environmental Impact Statement prepared by BMT WBM dated March 2011, and on the Application form, except as otherwise provided by the conditions of this consent.

Note: Any proposal to modify the terms or conditions of this consent whilst still maintaining substantially the same development to that approved, will require the submission of a formal application for Council's consideration in accordance with the provisions of Section 96 of the Environmental Planning and Assessment Act, 1979.

Reason: To confirm and clarify the terms of Council's approval.

B Conditions which must be satisfied during any development work

B1 Council's "PREVENT POLLUTION" sign being erected and maintained in a conspicuous location on or adjacent to the property boundary so that it is clearly visible to the public or at other locations on the site as otherwise directed by Council for the duration of construction work.

Note: Council's PREVENT POLLUTION sign can be obtained by presenting your development application receipt at Council's Customer Enquiry Counter at 282 King Street Newcastle or at the Master Builders Association office.

Reason: To increase industry and community awareness of developer's obligations to prevent pollution and to assist in ensuring compliance with the statutory provisions of the Protection of the Environment Operations Act 1997.

B2 Construction/demolition work that generates noise that is audible at residential premises being restricted to the following times:

- Monday to Friday, 7:00 am to 6:00 pm;
- Saturday, 8:00 am to 1:00 pm;

With no noise from construction/demolition work to be generated on Sundays or Public Holidays.

Reason: To prevent 'offensive noise' from construction/demolition sites in order to safeguard the amenity of the neighbourhood

B3 All vegetated areas outside the boundaries of the proposed development being kept free from disturbance of machinery, parked vehicles and waste material.

Reason: To prevent environmental pollution and harm to flora/fauna and to ensure compliance with the relevant provisions of the *Protection of the Environment Operations Act 1997*.

B4 Any fill material imported into the site being Virgin Excavated Natural Material or material subject to a Resource Recovery Exemption that is permitted to be used as a fill material, in accordance with the provisions of the *Protection of the Environment Operations Act 1997* and the *Protection of the Environment (Waste) Regulation 2005*.

Reason: To ensure that any imported fill is of an acceptable standard for environmental protection purposes.

B5 Any fill material subject to a Resource Recovery Exemption received at the site must be accompanied by documentation demonstrating that material's compliance with the conditions of the exemption, and this documentation must be provided to Council officers or the Principal Certifying Authority on request.

Reason: To ensure that any imported fill is of an acceptable standard for environmental protection purposes.

B6 Any excavated material to be removed from the site being assessed, classified, transported and disposed of in accordance with the Department of Environment and Climate Change's (DECC) '*Waste Classification Guidelines Part 1: Classifying Waste'*.

Reason: To prevent environmental pollution and to ensure observance of appropriate health standards.

B7 Appropriate erosion protection and soil stabilisation measures being designed and implemented during site works in accordance with the requirements of the *Managing Urban Stormwater: Soils and Construction 4th Edition - Vol. 1* (the "Blue Book") published by Landcom, 2004.

Reason: To control soil erosion and prevent sedimentation of surrounding lands both private and public.

B8 The proposed development being carried out in accordance with Acid Sulphate Soils Management Plant (ASSMP) prepared by the HWC dated 2010

Reason: To ensure appropriate management of Acid Sulphate soils and to protect the environment of the locality

C Conditions which must be satisfied prior to any occupation or use of the building

C1 Any necessary alterations to public utility installations being at the Developer/Demolisher's expense and to the requirements of both Council and the appropriate authorities.

Reason: To ensure that any required alterations to public utility infrastructure are undertaken to acceptable standards and without demands on public sector resources.

D Conditions which must be satisfied during the ongoing use of the development

D1 The use and occupation of the premises including all plant and equipment installed thereon, not giving rise to any "offensive noise", as defined under the Protection of the Environment Operations Act, 1997, as amended.

Note: Should Council consider that offensive noise has emanated from the premises, the owner/occupier of the premises will be required to submit an acoustic consultant's report recommending appropriate acoustic measures necessary to ensure future compliance with this condition and will be required to implement such measures within a nominated period. Furthermore, written certification from the said consultant confirming that the recommended acoustic measures have been satisfactorily implemented will be required to be submitted to Council before the expiration of the nominated period.

Reason: To ensure that appropriate noise control measures are implemented if required.

D2 There being no interference with the amenity of the neighbourhood by reason of the emission of any "offensive noise", vibration, smell, fumes, smoke, vapour, steam, soot, ash or dust, or otherwise as a result of the proposed development.

Reason: To prevent environmental pollution, to ensure observance of appropriate public health standards and to protect the existing amenity of the neighbourhood.

D3 Prior to the commencement of operation of the proposed development, the applicant must prepare and implement an Operations Management Plan (OMP) to monitor and assess the impact of the project on the surrounding environment. The OMP must be submitted to Council prior to the commencement of operation of the proposed development and shall include, but not be limited to:

(a) A environmental monitoring program identifying strategies, sampling design, surveying and reporting requirements for assessment of the following environmental indicators:

- Water levels within Melaleuca Swamp, Reed Marsh and surrounding watercourses
- Water quality within the wetlands and surrounding watercourses utilising parameters such as dissolved oxygen, salinity, pH, turbidity, temperature and nutrients
- Changes in vegetation including variation in community types, species and condition and changes to vegetation over time
- Changes to presence or distribution of fauna, including microbiological organisms, fish, amphibians, terrestrial fauna and avifauna

(b) A water level control strategy outlining measures that will enable the project to be completed without generating water pollution. The water level control strategy shall include:

- Maximum sustainable application rates of water pumped to the melaleuca plantation and long-term pumping schedules. Indicators for cessation of pumping should be defined.
- Site management measures to prevent artificial discharges to Ironbark Creek and Canoe Channel. Monitoring should be conducted in both Ironbark Creek and Canoe Channel to allow assessment of volume changes and nutrient loads.

Reason: To prevent environmental pollution and harm to flora/fauna and to ensure compliance with the relevant provisions of the *Protection of the Environment Operations Act 1997*.

E Other Agency Conditions

E1 The development has been granted an approval from the NSW Office of Water dated 18 February 2011 pursuant to Section 91 of the Water Management Act 2000. The development shall comply with the general terms of approval provided by this agency.

Reason: To advise the necessity for compliance with the particular requirements of other relevant authorities.

F Advisory Notes

F1 Prior to commencing any construction works, the following provisions of the Environmental Planning and Assessment Act 1979 (the 'Act') are to be complied with:

a) A Construction Certificate is to be obtained in accordance with Section 81A(2)(a) of the Act.

b) A Principal Certifying Authority is to be appointed and Council is to be notified of the appointment in accordance with Section 81A(2)(b) of the Act and form 7 of schedule 1 to the Regulations.

c) Council is to be given at least two days notice of the date intended for commencement of building works, in accordance with Section 81A(2)(c) of the Act and Form 7 of Schedule 1 to the Regulations.

Reason: To advise of matters to be resolved prior to the commencement of work.

F2 Prior to the occupation of a new building, or, occupation or use of an altered portion of, or an extension to an existing building, an Occupation Certificate is to be obtained from the Principal Certifying Authority appointed for the proposed development. An application for an Occupation Certificate must contain the information set out in Clause 155 of the Environmental Planning and Assessment Regulations.

Reason: To ensure compliance with Section 109M of the Environmental Planning and Assessment Act 1979, as amended.

APPENDIX B – Environmental Impact Statement (including two Addendums)

APPENDIX C – Referral Comments

Comments from External Agencies

Agency	Comments
Department of Planning	Attached
Department of Environment, Climate Change and Water	Attached
NSW Office of Water	Attached
Aquatic Habitat Protection Unit of Industry and Investment	Attached
Roads and Traffic Authority	Attached
Energy Australia	Attached
Transgrid	Attached

Comments from Internal Departments

Department	Comments
-Environmental Services	Attached