



Lake Macquarie
City Council

Awaba Waste Management Facility Biodiversity Offset Strategy



Lake Macquarie City Council March 2017

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Executive summary

This document outlines details of Lake Macquarie City Council's updated offset strategy under the EPBC Act approval for the Awaba Waste Management Facility (Ref 2011/5973). The strategy varies the approved offset arrangement as provided for in condition 3 of the approval.

Land was purchased by the Council to offset clearing impacts of the project on the nationally listed plant *Tetratheca juncea*. Known as the Awaba Biodiversity Conservation Area, this area is close to the area of clearing for the project. It offsets three development projects and is managed by the Council in accordance with a management plan approved by the NSW Government.

There are minimal risks associated with achieving the biodiversity offsetting objectives because offset land has been acquired and is already being managed for this purpose.

Introduction

This biodiversity offset strategy has been prepared by Lake Macquarie City Council to accompany a request to the Commonwealth Department of the Environment and Energy seeking variation to an approval under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). It is proposed to implement an alternative offset strategy to compensate for the loss of the nationally listed plant *Tetratheca juncea* which is a consequence of vegetation clearing associated with the project.

Project approval was given under the EPBC Act for the Awaba Waste Management Facility (AWMF) on 16 July 2013 (Ref 2011/5973). To compensate for the loss of approximately 2,300 *Tetratheca juncea* plants, condition 1 of the approval required protection and management of identified biodiversity offset areas through an enduring conservation mechanism.

The AWMF project required both NSW and Commonwealth approvals. The NSW approval under the *Environmental Planning and Assessment Act 1979* was given during 2013 with biodiversity impacts and offsets assessed using the NSW Biobanking Assessment Methodology. Biodiversity offset arrangements were a condition of the NSW approval. Following a third party NSW Land and Environment Court appeal against the terms of the NSW approval, and finalisation and approval of the nearby Alternative Waste Treatment Facility, the original offset proposal could not be achieved. Therefore, an alternative offset area was secured, in accordance with a biodiversity offset strategy outlined in a Biobanking Assessment Report (Niche 2013) and approved in the NSW Government development consent as modified by the order of the NSW Land and Environment Court. Approval is now sought for an alternative offset strategy as provided for in Condition 3 of the Awaba Waste Management Facility EPBC Act approval.

The updated and final offset strategy is outlined in this document. Preparation of the strategy has taken into account the EPBC Offsets Policy and Offsets Assessment Guide.

Biodiversity offset objectives

The objectives of the biodiversity offset strategy are:

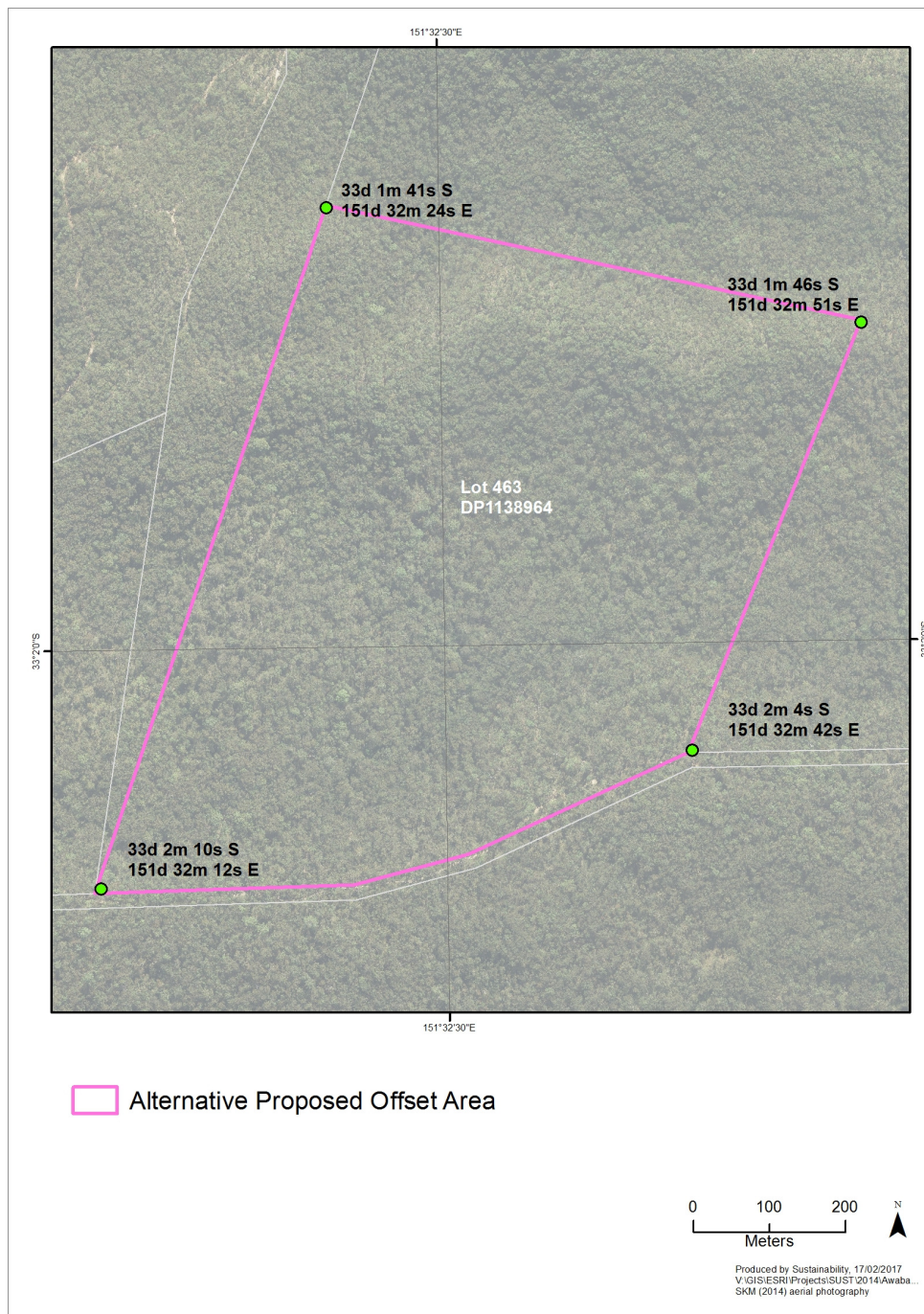
1. To offset loss of biodiversity from the development to meet the EPBC Act Environmental Offsets Policy (Department of Sustainability, Environment, Water, Population and Communities 2012) and NSW approval requirements.
2. To offset loss of EPBC Act matters of national environmental significance by protecting land with an occurrence of species of national significance, specifically the listed plant species *Tetratheca juncea*.
3. To acquire and manage an area of native vegetation for the purpose of conserving biodiversity in perpetuity close to the area of loss.

Biodiversity values & offset arrangements

Biodiversity values and impacts have been assessed under both Commonwealth and NSW legislation. The offset has been designed to meet the requirements of both levels of government and project approval conditions.

The alternative offset for the AWMF project is the acquisition, protection and management of a nearby area of native vegetation as a conservation reserve in perpetuity as shown on Map 1.

Map 1 - Offset area for Awaba Waste Management Facility



The following sections provide background on the offset arrangement, and how this meets EPBC Act and NSW policy and legislative requirements. The offset is based on extensive ecological studies which have identified the ecological values impacted upon by the project and protected on the offset site which is known as the Awaba Biodiversity Conservation Area (ABCA). The offset also takes into account the Lake Macquarie *Tetratheca juncea* Planning and Management Guidelines (Lake Macquarie City Council 2014) which were prepared by the Council with Commonwealth and State specialist consultation.

EPBC Act Offsets

In developing the offset for the project, the Commonwealth EPBC Act Environmental Offsets Policy and the accompanying Offset Assessments Guide have been applied. The offset principles outlined in the Policy have been met. The relevant matter of national environmental significance for the EPBC Act approval is the listed threatened plant black eyed-susan *Tetratheca juncea* which is also listed as threatened in NSW legislation.

A maximum of 2,302 *Tetratheca juncea* plants are expected to be removed as a result of the project, and the offset will protect habitat for this species as well as other NSW listed threatened species. The 55.3 ha offset area for the project forms part of the Awaba Biodiversity Conservation Area purchased by Lake Macquarie City Council and managed in perpetuity for conservation, in accordance with a registered covenant on the land. The offset area protects 3,795 *Tetratheca juncea* plants and has been managed for conservation purposes since its purchase in 2014.

Table 1 shows how the Commonwealth EPBC Act Environmental Offsets Policy has been met.

Table 1 – Commonwealth EPBC Act Environmental Offsets Policy requirements

Requirement	Comment
1 Suitable offsets must deliver an overall conservation outcome that improves or maintains the viability of the protected matter	The 7.2 ha of <i>Tetratheca juncea</i> habitat comprising 2,302 plants will be offset through the protection of 55.3 ha of habitat with 3,795 plants in a managed conservation area. In terms of the area of habitat protected, the minimum 90% direct offset requirement has been met.
2 Suitable offsets must be built around direct offsets but may include other compensatory measures	The offset is based on the purchase and management in perpetuity of conservation land with a plan of management. The ABCA also offsets another EPBC Act approved project for which offsets were required.
3 Suitable offsets must be in proportion to the level of statutory protection that applies to the protected matter	<i>Tetratheca juncea</i> is identified as a vulnerable species under the EPBC Act and is widespread in the Lake Macquarie local government area. The status of the species has been reviewed in Lake Macquarie City Council (2014) which provides the framework for the long term conservation of this species within the area.

4 Suitable offsets must be of a size and scale proportionate to the residual impacts on the protected matter	The EPBC Act Offsets Assessment Guide has been applied. The offset also meets the requirements of the NSW Biobanking Assessment Methodology which ensures that the impacts of the proposed development are adequately offset.
5 Suitable offsets must effectively account for and manage the risks of the offset not succeeding	The offset is already in place, with a secure covenant on the land, approved plan of management, and funding to ensure that management actions are implemented. These arrangements have been in place since 2015 and will continue in perpetuity.
6 Suitable offsets must be additional to what is already required, determined by law or planning regulations, or agreed to under other schemes or programs	The offset is an addition to the protection provided to <i>Tetratheca juncea</i> at the time of the project approval. The offset site was purchased for the purpose of conservation of the species, as it is poorly reserved and protected over its distribution.
7 Suitable offsets must be efficient, effective, timely, transparent, scientifically robust and reasonable	The offset has been implemented, and is effective. Management of the ABCA is transparent and ongoing funding commitment.
8 Suitable offsets must have transparent governance arrangements including being able to be readily measured, monitored, audited and enforced	Governance arrangements for the offset site are provided for under the <i>NSW Local Government Act 1993</i> and the Awaba Biodiversity Conservation Area Plan of Management 2015. The plan provides for ongoing monitoring of the offset site.

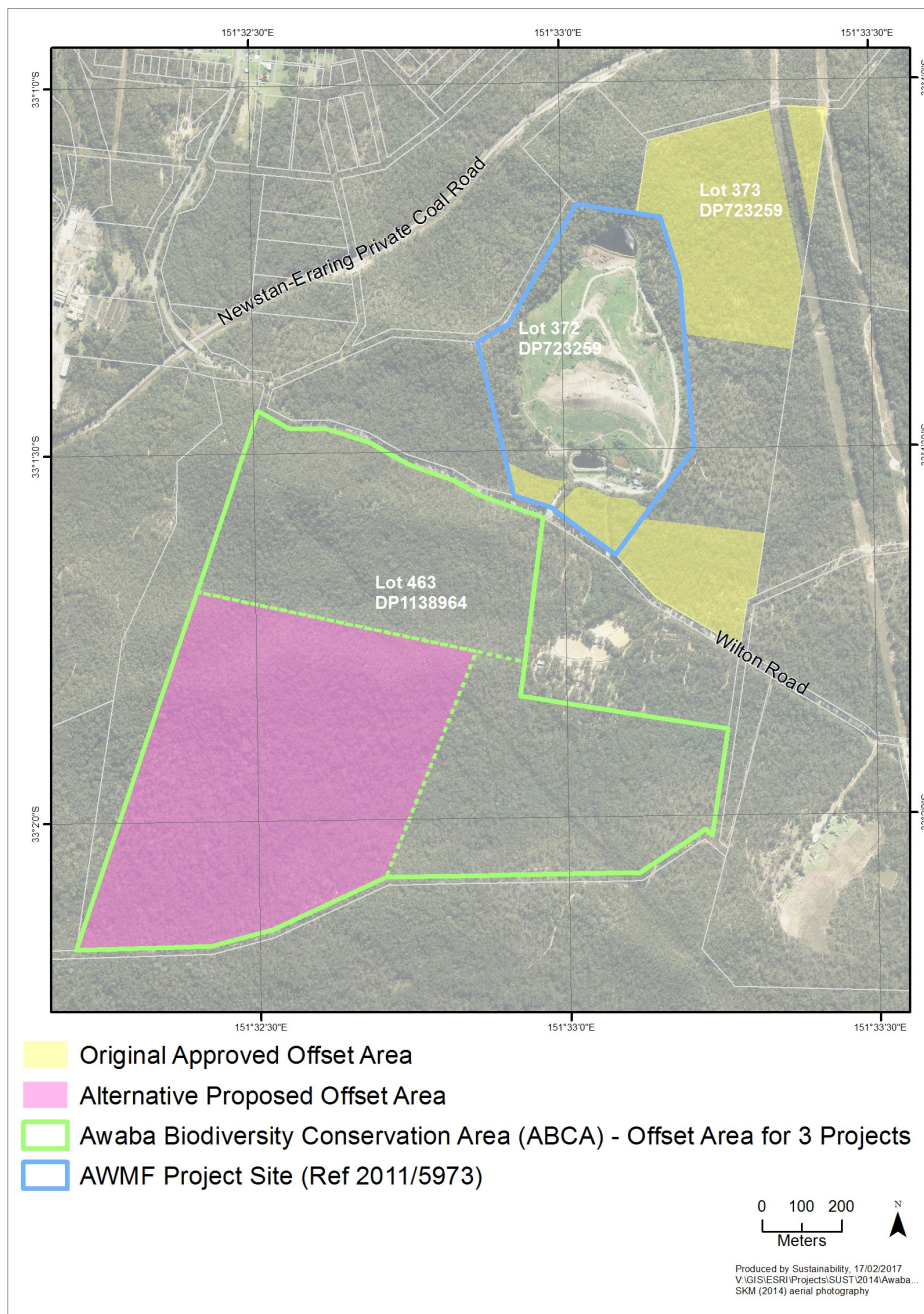
Table 2 provides a comparison between the approved and alternative proposed offset. The area of the EPBC Act approved project and offset, and the alternative offset for which approval is sought are shown on Map 2. The alternative offset is a requirement of the final NSW project approval, and also forms part of an EPBC Act approval for another project. Therefore no opportunity exists to change the scope of the offset for the project.

Table 2 – Comparison between approved and proposed offset

	Approved offset	Alternative offset
Offset area	7.2 ha	55.3 ha
Number of plants	Not known	3,795
Offset condition	Moderately disturbed condition, subject to potential impact and disturbance	High condition, and located in a large area of contiguous native vegetation zoned for environment protection.
Offset security	Although it was proposed to establish a Biobank site under NSW legislation, this could not proceed as a result of mining approvals affecting the land.	The NSW Land and Environment Court varied the NSW approval and required a restrictive covenant on the offset land and this is in place.

Management and monitoring	Proposed Biobank site arrangements.	Management and monitoring in as provided for in an approved plan of management, with ongoing funding allocation.
Risk	High risk. The proposed arrangement was not able to be implemented as a result of circumstances outside the Council's control.	Minimal. The offset is in place and operating effectively.

Map 2 - Offset area and original approved area



The alternative offset meets the Commonwealth EPBC Act Environmental Offsets Policy and offers greater benefits than the approved biodiversity offsets, especially in relation to ongoing protection and management. The offset calculator in the Offsets Assessment Guide has been applied to determine the offset benefit arising from the alternative proposed offset. This Policy and the Guide have been met in the following ways:

1. Habitat for *Tetratheca juncea*, vegetation condition, and the number of plants to be offset have been surveyed by qualified ecologists, ensuring a high degree of confidence for the purpose of calculating the offset benefit.
2. The condition class estimates used in applying the Offsets Assessment Guide reflect the high quality of the offset site, and the maintenance of the habitat quality that will occur as a result of active management of the site in accordance with the plan of management. This will primarily be a result of weed control and prevention of future disturbance that could have occurred before the property was acquired and managed by Lake Macquarie City Council. The condition class has been determined to be of high quality based on ecological assessment of the site by Niche Environment and Heritage (2013b).
3. The risk of loss without the offset (5%) compares with a 0% risk of loss with the offset in place. This has been used in applying the Offsets Assessment Guide calculator. Under its previous ownership, the offset site could potentially have been subject to disturbance to remove habitat as a result of infrastructure or other development. An E2 Environmental Conservation zoning under Lake Macquarie Local Environmental Plan 2014 is now in place on the land, which together with an enduring protective covenant and active Council management of the land for conservation effectively prevents any risk of loss of habitat in the future.
4. Mechanisms are in place through consent compliance conditions to ensure monitoring and reporting take place to manage the risk of failure to achieve the offset objectives. Condition 5 of the Commonwealth EPBC Act approval and conditions in the NSW *Environmental Planning and Assessment Act 1979* approval provide a reporting and review mechanism. The Council will report on incidents and items that may adversely affect the biodiversity values of the site.
5. Ecological benefits of the offset commenced with the first year of active management of the site in 2016 and are expected to increase over time. A program of ecological monitoring on the site has commenced and will inform site management to ensure that improvements are effective and a stable natural ecosystem is maintained.
6. Lake Macquarie City Council maintains a formal register of biodiversity offset sites within the local government area, including sites in its ownership. This ensures transparency in administering the offset site, and in on ground management.

NSW State legislation offset requirements

Biodiversity values and impacts were assessed using the NSW Biobanking Assessment Methodology by Niche Environment and Heritage (2013a & b) to quantify the required offsets. The strategy is based on the application of the NSW Biobanking Assessment Methodology (Version 2.0).

A biodiversity offset strategy was prepared as part of the AWMF project documentation and is summarised in condition 50 (Table 3) of the NSW *Environmental Planning and Assessment Act 1979* approval. The strategy provides that the whole of the Awaba Biodiversity Conservation Area (ABCA) land (lot 463 DP 1138964) will be conserved for its biodiversity values in perpetuity, pursuant to the terms of a restrictive covenant referred to in the AWMF Development Approval (condition 51A). Details of the strategy are in Part 4 of the Awaba Biodiversity Conservation Area Plan of Management (Lake Macquarie City Council 2015).

As outlined in the biodiversity offset strategy and approved in the development consent, the “equivalent credits” available for offsetting on Lot 463 DP 1138964 and the “equivalent credits” used to offset the approved AWMF project are shown in the Table 3. The calculations are based on the determination by Niche (2013) and accepted by the NSW Government approval authority.

Table 3 - Biodiversity offset for Awaba Biodiversity Conservation Area (Lot 463 DP 1138964)

“Equivalent credit” type	“Equivalent credits” available	“Equivalent credits” used to offset AWMF	“Equivalent credits” available for other offsets
Ecosystem credits	869	392	477
Species credits – <i>Tetratheca juncea</i>	49,938	33,853	16,085
Species credits – <i>Acacia bynoeana</i>	6	0	6

Note: Since Biobanking credits are not being created, and therefore cannot be retired under the Biobanking Scheme as provided for in the *Threatened Species Conservation Act 1995*, Lake Macquarie City Council undertakes to record and account for the ‘equivalent credits’ on the land to ensure that they are not used more than once to offset development on other sites.

The calculation and use of the land for biodiversity offsetting has taken into account the Office of Environment and Heritage principles for the use of biodiversity offsets in NSW. The use and management of the land complies with these principles, particularly since the site will protect biodiversity values in the long term, the offsets are quantifiable, achieve like for like or better outcomes, and supplementary, and enforceable through development consent processes.

Development consent for the AWMF requires biodiversity offsets to be provided on Lot 463 DP 1138964 by maintaining on that land:

- 33,853 *Tetratheca juncea* species “equivalent credits”
- 392 ecosystem “equivalent credits”

The offset arrangement has been endorsed by relevant NSW government agencies. A biodiversity offsets balance register for the site is maintained by Lake Macquarie City Council to ensure the integrity of offset accounting on Council owned land. The offset credit apportionment for the three development projects is shown in Appendix F of the Awaba Biodiversity Conservation Area Plan of Management (Lake Macquarie City Council 2015). Offsets are provided on the land for three development projects, and a map showing the allocated offset areas for each project is in Appendix G of the Plan of Management. Details of the number of *Tetratheca*

juncea clumps on the offset site, and the condition and description of the site are included in Lake Macquarie City Council (2015).

Offset property & security

To facilitate the provision of offsets for the AWMF projects, Lake Macquarie City Council purchased 121 ha of land south of Wilton Road to be managed as a biodiversity offset. This is described as lot 463 DP 1138964 and is known as the Awaba Biodiversity Conservation Area (ABCA) and provides offsets for three development projects, 55.3 ha (45.6%) of which is allocated to the AWMF project. The ABCA is apportioned between each of the projects based on an assessment of biodiversity values using the NSW Biobanking Assessment Methodology, and approved by the NSW Department of Planning in consultation with the NSW Office of Environment and Heritage. The offset calculation identifies *Tetratheca juncea* plants.

The offset area as shown on the map is freehold land and was purchased by Lake Macquarie City Council in 2014. A covenant was registered to secure the conservation of the land in June 2015 recognising the Land and Environment Court order, the offset strategy and the restrictions on the use of the land (Ref AJ472503 on the certificate of title). The offset strategy is therefore secure, and management of the site is required in conformity with the approved management plan.

Details of the biodiversity values and management issues of the ABCA are included in the management plan (Lake Macquarie City Council 2015). The ABCA is south of Wilton Road at Awaba, and has an undulating topography rising from about 20 metres to 100 metres above sea level. It comprises two main gullies running from west to east and three east–west oriented ridgelines with sandy loam soils. The southern gully on the land forms the headwaters of Kilaben Creek.

The land contains native vegetation over virtually its whole area with the exception of some tracks. Although there is evidence of some light logging in the past, the native vegetation remains in very good condition and there are virtually no weeds evident, except in localised areas of disturbance along tracks.

A biodiversity assessment of the land was undertaken to document its biodiversity values and credits that could be generated using the Biobanking Assessment Methodology (Niche Environment and Heritage 2013). Vegetation mapping identifies five vegetation communities. A total of 151 native plant species were recorded (Niche Environment and Heritage 2013). Thirty six fauna species have been recorded on the site, including two threatened fauna species, being the Powerful Owl and Glossy Black Cockatoo. Species lists are in Lake Macquarie City Council (2015).

Active management has been in place since the finalisation of the management plan in 2015, including weed control, track management, flora and fauna monitoring and bushfire management. Ecological improvements that have resulted from the implementation of the biodiversity offset strategy are the securing of *Tetratheca juncea* plants in perpetuity in a conservation reserve, and actively managing the area to protect these plants and other biodiversity values. These benefits would not have occurred without an offset strategy in place.

The ABCA site was intended to be established as a Biobank site under the NSW *Threatened Species Conservation Act 1995*, and the relevant methodology was used to balance losses and gains using calculation of both ecosystem credits and species credits. However, following the objection from the mining lease holder and the

subsequent Land and Environment Court determination, the offset site was secured by the registration of a positive public covenant made under Section 88D of the *Conveyancing Act 1919* (NSW). This arrangement was recognised in the project approval issued by the NSW Minister for Planning as modified by the Land and Environment Court order on 23 October 2103.

The offset proposed for the AWMF as shown on the map comprises an area of 55.3 ha to offset 33,853 *Tetratheca juncea* species credits. This represents 45.6% of the Awaba Biodiversity Conservation Area managed by Lake Macquarie City Council as an offset site in accordance with the Awaba Biodiversity Conservation Area Plan of Management (Lake Macquarie City Council 2015).

The final biodiversity offset land comprises 121 ha of natural bushland located immediately south of both proposed project areas, and is known as the Awaba Biodiversity Conservation Area (ABCA). As required by the development consent, a plan of management for the ABCA was prepared in February 2015 and approved by the NSW Department of Planning in consultation with the NSW Office of Environment and Heritage.

The final biodiversity offset arrangement has significant benefits when compared to the original approved proposal. It protects an additional 17.0 ha of native vegetation as part of a separate and larger area of contiguous native vegetation which has been secured by a public positive covenant. The loss of *Tetratheca juncea* plants has been fully offset by applying species credit method used by the NSW *Threatened Species Conservation Act 1995* Biobanking Assessment Methodology.

Conservation commitments

The conservation of the biodiversity offset for the AWMF project has now been secured. As provided for in the plan of management for the ABCA and included as Appendix 1, Lake Macquarie City Council is committed to protecting the biodiversity values on the land as a biodiversity offset with the following land management objectives:

1. To maintain and improve the biodiversity values of the land, and support the conservation of adjoining bushland.
2. To periodically monitor biodiversity, and review the effectiveness of management actions.
3. To provide access for approved uses on the land (eg Aboriginal traditional use or scientific research) compatible with the protection of its biodiversity values.
4. To minimise long-term management costs.
5. To ensure that the interests of neighbouring property owners and users are taken into account in managing the land.

Specific commitments are included in Table 4.

Table 4 – Specific commitments

	Commitment	Comment
Offset area	The 55.3 ha offset area has been established and will be managed in accordance with the approved plan of management.	Council may investigate options to facilitate the conservation of adjoining land, thereby improving the conservation security of the Awaba Biodiversity Conservation Area.
<i>Tetratheca juncea</i> plants	No disturbance of the site will occur, and <i>Tetratheca juncea</i> plants will be protected through habitat protection and weeding where required.	The <i>Tetratheca juncea</i> plants on the site are effectively conserved, and no risks or unanticipated events have been identified which would adversely affect their long term survival on the site.
Offset condition	The current condition of the offset site will be maintained and improved, as provided for in the plan of management.	Qualified ecologists will be responsible for the monitoring program. This will allow for adaptive management of the site for a range of threatened species, including <i>Tetratheca juncea</i> .
Offset security	The covenant on the title of the Awaba Biodiversity Conservation Area land (Dealing AJ472503) will be retained. Lake Macquarie City Council will consider making the site a Biobanking site under the <i>Threatened Species Conservation Act 1995</i> if this becomes feasible in the future.	Establishment of a Biobanking site will further improve conservation security.
Management and monitoring	Management and monitoring will continue in accordance with an approved plan of management, with ongoing funding allocation.	Reporting will be undertaken in accordance with relevant approval requirements. Qualified ecologists are engaged to undertake monitoring.
Risk	Although there are minimal risks to achieving the objectives of the biodiversity offset strategy, Lake Macquarie City Council has in place a risk management framework as part of its management of the site.	The annual monitoring program for the Awaba Biodiversity Conservation Area will review risks.
Reporting	The Council will report on the management of the offset site as required by State and Commonwealth approvals.	Monitoring data will be used as the basis for reporting on change to condition of the offset site.
Accountabilities	Management of the Awaba Biodiversity Conservation Area is the responsibility of Lake Macquarie City Council's Sustainability Department	Adaptive management and corrective measures will be implemented as required, based on annual monitoring.

Risk management & accountabilities

Offset arrangements are already in place because the land has been purchased, a restrictive covenant has been placed over the land, a plan of management has been prepared, and management actions and monitoring have been implemented. There are minimal risks that the offset strategy will not be effective.

Unplanned circumstances and risks primarily relate to significant events that may arise such as bushfires, storms or other disturbance. As an ongoing management authority established under the NSW *Local Government Act 1993*, Lake Macquarie City Council has the capacity and resources to effectively manage these risks.

In the event of unforeseen events occurring, Lake Macquarie City Council will report on any incidents which will affect the achievement of the biodiversity offset objectives. Reporting mechanisms are provided for under the approval consent conditions and the management plan for the land (Lake Macquarie City Council 2015)

Conclusion

The biodiversity offset strategy for the Awaba Waste Management Facility has been implemented and is now in place, following amendments resulting from NSW Government processes. The NSW Government has approved the offset strategy and the offset area was purchased in 2014, secured by a restrictive conservation covenant and managed in accordance with a plan of management.

As provided for in condition 3 of the EPBC Act approval for the Awaba Waste Management Facility Project, approval of the alternative biodiversity offset strategy is sought to enable the project to proceed.

References

Department of Sustainability, Environment, Water, Population and Communities (2012) Environment Protection and Biodiversity Conservation Act 1999 – Environmental Offsets Policy.

Department of Sustainability, Environment, Water, Population and Communities (2011) EPBC Act 1999 referral guidelines for the vulnerable black-eyed susan, *Tetralochea juncea* <http://www.environment.gov.au/system/files/resources/07de9ab9-5a54-4f2a-8e48-1bfdf5832ab2/files/black-eyed-susan-referral-guidelines.pdf>

Department of the Environment (2014) Environmental Management Plan Guidelines.

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<https://www.lakemac.com.au/downloads/D59CA6928BC7034C52D192AECA9517DB64B0E821.pdf>.

Lake Macquarie City Council (2015) Awaba Biodiversity Conservation Area Plan of Management 2015.

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Niche Environment and Heritage (2013a) Biobanking Assessment Report – Awaba Biobank Site, Wilton Road Awaba NSW Lots 372 and 373 (DP 723259) and Lot 463 (DP 755207), November 2013. (TRIM D06829489)

Niche Environment and Heritage (2013b) Biobanking Assessment Report – Awaba Biobank Site, Lot 463 Wilton Rd Awaba, September 2013. (TRIM D03428617)

Appendices

Appendix 1 Awaba Biodiversity Conservation Area Plan of Management 2015