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Biodiversity Offset Management Plan

Proposed New Armidale Landfill Facility

Report Number 22678.38513

Prepared for

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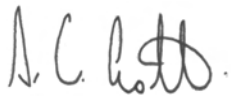
Signatures				

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This document provides information to address the intent of Project Number 22678 as agreed to by AECOM.

Executive Summary

The proposed development of the new Armidale Dumaresq landfill will result in the loss of 12.7 ha of Stringybark Woodland, 0.6 ha of Box Gum Woodland in the TSR, 6.5 ha of grassland, two small farm dams and 0.5 ha of sedgeland draining into the Gara River. This loss of habitat will have a significant impact on local populations of two threatened woodland birds (Diamond Firetail Finch *Stagonopleura guttata* and Speckled Warbler *Pyrrholaemus sagittata*) and two provisionally listed birds (Scarlet Robin *Petroica boodang* and Varied Sittella *Daphoenositta chrysolptera*) that have been observed on the proposed landfill footprint area. Habitat loss to these species will be offset by setting aside adjacent areas of similar areas of vegetation that are likely to respond to conservation measures to permanently improve biodiversity values of the offset area.

Areas of vegetation offset or compensatory habitat are proposed to be developed at a 3:1 ratio (i.e. three times more revegetated area than the area quarantined for landfilling purposes). This will result in the protection and regeneration of approximately 61 ha of land within the overall development site. Offsets would be established across the site within areas not proposed for the actual landfilling operations.

This report provides details of the type, location and size of the vegetation offsets and details of the methodology to be used for establishment, monitoring and management of the offset area. Offset management will include fencing and removal of livestock, revegetation and rehabilitation, weed and feral animal control, and relocation of dead wood and dead trees.

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1. Background

E.A. Systems was engaged by AECOM on behalf of the Armidale Dumaresq Council to conduct a flora and fauna and habitat assessment over an area of 314 ha for the proposed development of a new regional landfill facility to be located 12 km east of Armidale on the Waterfall Way. This facility is expected to have an operational life of 50 years. The proposed landfill site will be developed on portions of two rural properties, *Sherraloy* and *Edington,* and a small strip of the adjacent *Gara Travelling Stock Reserve* for site access. The development application for this proposal will be assessed under *Part 3A – Major Projects of the Environmental Planning and Assessment Act* 1979 (EP&A Act).

The significance of impacts of the proposed new landfill on threatened species, endangered populations or endangered ecological communities listed under the NSW *Threatened Species Conservation Act* 1995 (TSC Act) were assessed in accordance with guidelines set out in the *TSC Amendment Act 2002.* The assessment also considered the impact of the proposed development on matters of national environmental significance listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and potential Koala habitat under the *State Environmental Planning Policy 44 - Koala Habitat Protection.*

The proposed development will result in the loss of 12.7 ha of Stringybark Woodland, 0.6 ha of Box Gum Woodland in the TSR, 6.5 ha of grassland, two small farm dams and 0.5 ha of sedgeland draining into the Gara River. Such disturbances reduce the habitat quality of the affected land and may threaten viable populations of threatened species found on the subject site.

It was concluded that the loss of habitat due to the proposed development will have a significant impact on local populations of two threatened woodland birds (Diamond Firetail Finch *Stagonopleura guttata* and Speckled Warbler *Pyrrholaemus sagittata*) and two provisionally listed birds (Scarlet Robin *Petroica boodang* and Varied Sittella *Daphoenositta chrysoptera*) that have been observed on the proposed landfill footprint area. These species were also recorded in the Box-Gum Woodland in the Gara travelling stock route (TSR). Habitat loss to these species on the development site will be offset by setting aside adjacent areas of similar vegetation type that are likely to respond to conservation measures that will permanently improve biodiversity values of the offset area.

Guidelines on how to offset negative impacts upon threatened species and communities of the proposed new Regional Landfill facility have been provided by Department of Environment and Conservation (DEC; now Department of Environment, Climate Change and Water (DECCW)) after a site inspection to assess habitat quality and an assessment of information provided by E.A. Systems' ecologists (Appendix A). These guidelines advise actions and management requirements to maximise the environmental outcomes of offsets recommended for areas surrounding the proposed landfill.

2. Size of Offsets Required

Areas of vegetation offset or compensatory habitat are proposed to be developed at a 3:1 ratio of offset to impact area (i.e. three times more revegetated area than the area quarantined for landfilling purposes). Offset areas will protect and allow regeneration of approximately 61 ha of land within the overall development site. Offsets would be established across the site within areas of the site that are not proposed for the actual landfilling operations.

The Biometric Tool used in the Property Vegetation Planning (PVP) process typically applies offset ratios to impact area of 20:1 for many threatened species in NSW (NSW Department of Natural Resources 2005). However, in this instance DECCW has suggested that there is potential for intensive management of offsets that might greatly improve the biodiversity contribution to the area (Appendix A). Thus, if suitable management effort is incorporated in the proposal, an offset ratio of 3:1 or greater may be appropriate for the landfill (DEC 2006); Appendix A).

The landfill operational area will occupy 20.3 ha. This includes 12.7 ha of regrowth Stringybark Woodland containing Box Gum Woodland elements (i.e. several individual Yellow Box and Blakely's Red Gum trees), 0.6 ha of Box Gum Woodland within the TSR, 6.5 ha of cleared grassland which will be progressively cleared over the lifespan of the facility, and 0.5 ha of sedgeland. A 3:1 offset to impact ratio will result in an area of 40 ha of Stringybark Woodland, containing individual Yellow Box and Blakely's Red Gum trees, which will be set aside and managed for conservation to compensate for woodland lost to development. The Stringybark Woodland offset areas will be adjacent to the landfill operational area and are part of an existing remnant of Stringybark Woodland that contains Yellow Box and Red Gum trees. An offset of 21 ha of cleared grasslands within the subject site will be set aside for conservation.

3. Location of Proposed Offsets

The proposed compensatory offset area would surround the landfill site and connect to the Gara TSR (Figure 1 and Figure 2).

DECCW guidelines indicate that they would prefer woodland areas to the south and east of the landfill to be core portions of the offset design and suggest that the biodiversity value of the offsets would be enhanced if these areas connect to other areas of woodland.

Rehabilitation of areas to the west of the landfill pit would provide a linkage to woodland remnants within 600 m of the development. Fencing of the area, which contains some existing Stringybark trees, will allow for a degree of natural regeneration. However, planting of additional trees in the southern portion of this area will likely be required to achieve adequate regeneration of the offset area.

Due to the poor condition of existing vegetation at the site and the limited connectivity to surrounding vegetation, the existing remnant woodland currently has low connectivity value. By using mitigation measures to improve the condition of vegetation, and planting buffers to increase connectivity, the site could be improved to be one of high connectivity value (Department of Environment and Climate Change NSW 2008). The development of a vegetation buffer along the access road will create a corridor connecting the offset area to the Gara TSR and the Gara Remnant Subregional Corridor (Figure 2). The access road buffer area shall be a minimum of 100 m wide to provide a suitable dispersal area for fauna (Department of Environment and Climate Change NSW 2008).