Appendix C Biodiversity Offset Strategy

WESTCONNEX – M4 WIDENING

Biodiversity Offsets Strategy

October 2014

Biodiversity Offsets Strategy

1.1 Purpose

The purpose of this Biodiversity Offset Strategy is to establish a commitment to offsetting the residual impacts on threatened species, populations and ecological communities resulting from the M4 Widening project. This Biodiversity Offset Strategy is a working document that will be developed and revised through the project approval process.

1.2 Agency requirements

This Biodiversity Offset Strategy has been prepared to address the NSW Department of Planning and Environment (DP&E) Director-General's Requirements (DGRs) issued on 4 November 2013 for assessment of the project under Part 5.1 of the NSW *Environmental Planning and Assessment* (EP&A) Act, 1979. In relation to biodiversity, the DGRs require:

> *details of any offset of ecological impacts and native vegetation clearing, taking into account the Principles for the use of biodiversity offsets in NSW (Department of Environment, Climate Change and Water 2008).*

The (NSW) Office of Environment and Heritage (OEH) reviewed the Environmental Impact Statement (EIS) and provided comments in their submission that a number of details regarding offsets are required where endangered ecological communities (EECs) would be impacted by the project:

> *The EIS should have included details on the location, duration, management regime, landowner endorsement and security of any offsets proposed.*

This Biodiversity Offset Strategy has also been prepared to address this comment.

1.3 Findings of the EIS

An EIS was prepared for the M4 Widening project and publicly exhibited between 13 August and 12 September 2014.

1.3.1 Threatened Ecological Communities

The EIS found that the following would be impacted by the project:

Threatened ecological communities	**Affected area**
Swamp Oak floodplain forest of the NSW North Coast, Sydney Basin and South East Corner Bioregion	0.08 hectares
Shale gravel transition forest in the Sydney Basin Bioregion	0.09 hectares
Freshwater wetlands on coastal floodplains of the NSW North Coast, Sydney Basin and South East Corner Bioregions	0.35 hectares

The EIS also identifies that 0.28 hectares of mangroves would be impacted by the project, in particular the bridge over Duck River.

1.4 Objectives of the offset strategy

This Biodiversity Offset Strategy has been prepared with the following objectives in mind:

- To provide options for offsetting residual impacts on threatened species, populations and ecological communities, and a framework for delivery of these options.
- Be consistent with the NSW *Offsets Policy for Major Projects* (OEH 2014) (OEH Offset Policy) and Roads and Maritime's *Guideline for Biodiversity Offsets* (Roads and Maritime 2011).
- To fully offset residual impacts on threatened ecological communities.
- To present a framework for setting the scope and quantum of the biodiversity offsets that is transparent and justifiable on environmental, social and economic grounds.
- To investigate as a priority 'like for like' offsets.

1.5 Policy framework

As detailed in the EIS, a number of documents were reviewed to identify the need for biodiversity offsets for this project.

- *EPBC Act Environmental Offsets Policy* (DSEWPaC 2012).
- *Principles for the Use of Biodiversity Offsets in NSW* (Department of Environment, Climate Change and Water 2008) as required in the DGRs.
- *Roads and Maritime Guideline for Biodiversity Offsets* (Roads and Maritime 2011b)
- *NSW Offsets Policy for Major Projects* (OEH 2014)

The biodiversity assessment undertaken for the EIS identified that the project would not have a significant impact on a matter of national environmental significance (MNES) listed under the EPBC Act. Accordingly, the EPBC Act environmental offsets policy does not apply in this instance.

The DGRs require the *Principles for the use of biodiversity offsets in NSW* (Department of Environment, Climate Change and Water 2008) to be taken into account, these principles do not apply to State Significant Infrastructure under Part 5.1 of the EP&A Act.

In September 2014, the OEH released the *NSW Biodiversity Offsets Policy for Major Projects* (OEH 2014). This policy supersedes the interim *NSW offset principles for major projects (state significant development and state significant infrastructure)* (OEH 2013).

The M4 Widening project is a State Significant Infrastructure project, and, while not required by the DGRs, this Biodiversity Offset Strategy also takes into account the new *Biodiversity Offsets Policy for Major Projects* (OEH 2014).

1.5.1 Roads and Maritime guideline for biodiversity offsets

This Biodiversity Offset Strategy also considers the Roads and Maritime Guideline for Biodiversity Offsets. Under this policy, offsets are not required as the project does not involve clearing of native vegetation of high conservation value. To ensure a net improvement in biodiversity over time, this Biodiversity Offset Strategy takes into account the six principles in the NSW *Biodiversity Offsets Policy for Major Projects* (OEH 2014).

1.5.2 NSW Biodiversity Offsets Policy for Major Projects (OEH 2014)

The NSW *Biodiversity Offsets Policy for Major Projects* (OEH 2014) is underpinned by six principles.

These are:

1. Before offsets are considered, impacts must first be avoided and unavoidable impacts minimised through mitigation measures. Only then should offsets be considered for the remaining impacts.
2. Offset requirements should be based on a reliable and transparent assessment of losses and gains.
3. Offsets must be targeted to the biodiversity values being lost or to higher conservation priorities.
4. Offsets must be additional to other legal requirements.
5. Offsets must be enduring, enforceable and auditable.
6. Supplementary measures can be used in lieu of offsets.

For aquatic biodiversity, saline wetland vegetation formations (eg mangroves, coastal saltmarsh and seagrasses) must be assessed according to Fisheries NSW Policy and Guidelines. Aquatic biodiversity offset requirements are subject to habitat type classification by Fisheries policy and guidelines.

1.5.3 Consideration of NSW offset principles

The NSW offset principles have been considered as follows.

1. Before offsets are considered, impacts must first be avoided and unavoidable impacts minimised through mitigation measures. Only then should offsets be considered for the remaining impacts.

Avoid

In consideration of the overall project objectives, the concept design process involved the incorporation of considerable design refinements to ensure connectivity and network enhancement objectives were achieved whilst minimising environmental impacts, such as land acquisition and vegetation removal. The concept design is contained largely within the existing road reserve.

Ancillary sites would be located in areas already cleared/disturbed such as industrial land and land owned by Roads and Maritimeto avoid unnecessary clearing of vegetation for temporary works.

Minimise

A comprehensive ecological survey has been undertaken to accurately characterise biodiversity values on the site, and to inform development of management and mitigation measures. Mitigation measures to prevent indirect impacts on native vegetation and habitat would be implemented in accordance with *Roads and Maritime Biodiversity Guidelines: protecting and managing biodiversity on RMS Projects* (RTA 2010).

Offset

2. Offset requirements should be based on a reliable and transparent assessment of losses and gains.

Offset requirements will be calculated using the Biobanking Credit Calculator. All field surveys undertaken for this Biodiversity Assessment Report have been undertaken in accordance with the

Biobanking Assessment Methodology (BBAM). The biodiversity surveys were undertaken by experienced, accredited biobanking assessors. Data collected for vegetation zones identified in the study area has been used to undertake the biodiversity credit calculation for the project.

3. Offsets must be targeted to the biodiversity values being lost or to higher conservation priorities.

The first priority for investigation of offset sites is land containing moderate to good condition habitat representative of the three TECs affected.

A review of the OEH Biobanking Public Register identified three biobanking agreements with those suitable ecosystem credits currently available.

4. Offsets must be additional to other legal requirements.

Offset sites that are already specifically funded and managed for conservation would not be considered for this project. Offset sites should benefit from additional management activities beyond what is already legally required or increased security and protection.

5. Offsets must be enduring, enforceable and auditable.

The policy requires a biobanking agreement as the preferred mechanism for securing an offset site. However, due to the relatively small amount of credits likely to be required to offset impacts from the M4 Widening project, the purchase and retirement of suitable biodiversity credits under the BioBanking Scheme should be considered as being in accordance with this principle.

6. Supplementary measures can be used in lieu of offsets.

It is unlikely that supplementary measures will be required by the project as the ecosystem credits required to fully offset the proposed development are readily available on the market at time of preparing this Biodiversity Offset Strategy. Notwithstanding this, supplementary measures would be the last option considered and would only be considered in consultation with OEH and where benefits can be clearly demonstrated.

1.6 Process for identifying and delivering required offsets

1.6.1 Identifying biodiversity impacts of project to be offset

The BBAM provides a set of rules to determine the number and type of biodiversity credits that a development site will require to offset impacts. All field survey undertaken as part of the biodiversity assessment has been undertaken in accordance with the BBAM and a Biobanking Assessment of the proposal has been undertaken. Plot and transect data collected as part of this biodiversity assessment and the EIS will be used to calculate impacts on biodiversity and credits required to offset residual impacts on biodiversity resulting from the project using the Biobanking Credit Calculator.

This allows quantification of appropriate offsets in terms of 'ecosystem credits'. Ecosystem credits apply to all ecological communities as well as threatened species that can be reliably predicted as occurring on site, using the presence of vegetation that provides suitable habitat. The number of credits calculated depends on a number of factors such as the structure and function of ecosystems and landscape context.

A biobanking assessment will be undertaken for the project and when complete will provide suitable biobanking credits required for the project. These will then be used to determine what offset measures will be required.

1.6.2 Biobanking credits required

The biobanking assessment will provide a credit calculation for the project. At time of preparation of this Biodiversity Offset Strategy, the new credit calculator is not yet available for use. OEH have advised that for the purposes of this biobanking assessment, Version 2 of the credit calculator is suitable for use (Sarah Burke, Regional Operations Group, Sydney, OEH, pers comm 8 October 2014).

Further refinement of the biobanking credit calculation will be undertaken during detailed design if required.

1.6.3 Offset measures

On completion of the biobanking credits calculation, biodiversity offset measures will be considered. A number of measures could be undertaken however the likely ones would include (but not be limited to) the following.

Biobank credits

Retirement of an appropriate number and class of biodiversity credits under the NSW Biobanking scheme. Several suitable Biobank sites with suitable, issued credits are currently available in Western Sydney. If deemed suitable in consultation with DP&E, negotiations would be undertaken with the landholder to purchase and retire sufficient credits to fully offset the impacts of the project.

Supplementary measures

Supplementary measures would be the last option considered once the other options have been exhausted, but as noted in Section 1.5.3.3, are unlikely to be required.

1.6.4 Process for implementing offsets

Biobank credits

- A search of the Biobanking Credit Register will be undertaken for suitable habitat credits and purchase and retire a suitable number of credits if available.
- If no suitable credits are available, equivalent NSW “Plant Community Type” (PCT) credits, if available, will be purchased and retired.
- If no equivalent PCT credits are available, ecosystem credits for PCTs in the same vegetation formation in the locality and with a similar or greater level of clearing will be purchased and retired.

Supplementary measures

- Any supplementary measures would be discussed with OEH.
- Consideration of supplementary measures would be limited to funding of management, research or education programs that specifically benefitted TECs nominated in the EIS.
- Supplementary measures would be capped at a maximum of 10 per cent of the offset package.

1.7 Mangroves

As stated previously, the EIS identifies that 0.28 hectares of mangroves would be impacted by the project, in particular the bridge over Duck River.

The OEH Offset Policy refers to the Fisheries NSW policy and guidelines for guidance on addressing aquatic impacts and offsetting. An outline of the aquatic biodiversity assessment and offset procedure can be found in *Fact sheet: Aquatic biodiversity* (OEH 2014). The factsheet sets out the requirements for offsets for aquatic biodiversity and fish habitats regulated under the *Fisheries Management Act 1994*.

To offset the mangroves at Duck River:

> *The developer may pay the value of the negotiated site-based offset requirement into the Fish Conservation Trust Fund and Fisheries NSW will manage the delivery of the site-based offset with a relevant public authority … a relevant local council or the Marine Park Authority.*

The Fisheries NSW policy and guidelines require a minimum 2:1 offset for Type 1-3 key fish habitats (this includes mangroves) to help redress both direct and indirect impacts of development. This is currently calculated at a rate of $56 per square metre (or $112 per square metre to meet the 2:1 offsetting requirement). The payment will be quarantined in the Fish Conservation Trust Fund to be used for supplementary measures.

At $112/m2 x 2800m2 = $313,600. This will need to be paid to NSW Fisheries prior to commencement of construction of the project. Suitable arrangements will be made should the project be approved.