

Warragamba Dam Raising Project

The Offset Strategy

Fact Sheet



What is the objective and approach?

The proposed Warragamba Dam Raising Project (the Project) involves raising the height and increasing the thickness of the dam creating an upstream 'flood mitigation zone' to temporarily hold back inflows. This would reduce the frequency and extent of major floods in the Hawkesbury-Nepean Valley downstream. Inflows from the upstream catchment temporarily stored in the flood mitigation zone would result in further temporary inundation above the maximum water storage level in Lake Burragorang. This could impact on environmental values.

The Warragamba Offset Strategy is designed to ensure that, on balance, there is no net loss to the environment from impacts that arise from the construction and operation of the the Project.

The objective of the offset strategy is to provide a framework for delivering offsets for the potential impacts of the Project, and to achieve a long-term conservation gain for threatened species, populations and communities, national parks and World Heritage values potentially impacted by the Project.

It provides for the biodiversity offsets required under the NSW Government's Framework for Biodiversity Assessment as set out in the Secretary's Environmental Assessment Requirements issued by the previous Department of Planning, Industry and Environment.

Avoid, minimise and mitigate

A key principle of the NSW Biodiversity Offsets Policy for Major Projects (NSW Government 2014)* requires that project proposals consider all reasonable measures to avoid and minimise impacts to biodiversity. An offset is a measure to compensate for any potential impact that cannot be avoided, managed or mitigated.

Assessing Project impacts

The varying impacts of the Project have necessitated different assessment approaches across the upstream, construction site, and downstream areas.

Project impacts that are not able to be avoided, managed or mitigated are then assigned offset credits calculated under the Framework for Biodiversity Assessment. However, credits under the Framework are no longer available for purchase.



Therefore, credits for establishing the Project offsets have been derived using the Biodiversity Assessment Method, which has replaced the Framework.

WaterNSW will seek a 'credit equivalence' statement before seeking to fulfil the offset requirements for the Project.

Upstream

For the upstream area there are no construction related impacts. Potential impacts to environmental values relate to the operation of the flood mitigation zone after construction and when there is a flood. The increased extent and duration of temporary upstream inundation may result in the loss of, or damage to, environmental values.

The extent to which this may occur is substantially dependent on a large range of independent variables such as: flood tolerance of species, geology, flood frequency, depth and duration of flooding, geographic setting, and lake edge effects.

Flood modelling was used to assess the potential change in temporary upstream inundation associated with the Project. The full range of flood events and lake variables were modelled to determine what the likely inundation area would be for both the existing dam and for the Project. This was used to identify the area most likely to be affected by temporary inundation.

This area is referred to as the 'Project upstream impact area' and is about 1,400 hectares. This includes national park estate and 304 hectares within the Greater Blue Mountains World Heritage Area.

For assessing impacts and determining offsets, a highly conservative assumption of a complete loss of environmental values within the Project upstream impact area was used. This is unlikely to occur in real-world terms.

The upstream biodiversity assessment assumed the presence of several threatened species for the purpose of calculating required species credits. This is likely to further overstate the magnitude of potential impacts and the required number of species credits to offset.

Should the Project be approved, WaterNSW would seek the option to conduct further surveys prior to operation of the Project for species where presence has been assumed, and to review the credit calculations for the relevant species accordingly.

Construction site

The development footprint (construction site) is the area required for construction, including roads, laydown and storage area, drainage and coffer dams, and support facilities.

Total clearing required for the construction of the Project is about 22 hectares. These areas do not comprise either national park estate or Greater Blue Mountains World Heritage Areas.

Revegetation works post-construction will assist in reducing the cumulative impact of the dam construction. The credits for establishing construction site offsets will be calculated based on the biodiversity values lost in the 22 hectares.

Downstream

Operation of the flood mitigation zone will result in changes to downstream hydrology and environmental flows. A risk assessment framework was used to determine the key likely impacts of the Project and the biodiversity features likely to be most sensitive to the predicted changes in hydrological conditions.

In the downstream study area there are numerous land uses and activities that have an existing impact on the environment. The downstream Hawkesbury-Nepean River is influenced by inflows from other tributaries (such as the Nepean, Grose, Macdonald, and Colo rivers and South Creek), runoff from rural and urban land uses, sand and gravel extraction and treated discharges from sewage treatment plants.

Given the multiple compounding factors influencing the downstream river environment, it is not possible to appropriately discern and apportion specific impacts resulting from the operation of the flood mitigation zone. The compounding factors increase with distance from the dam. The assessment found no quantifiable significant downstream impacts that could be attributed to the Project alone and no offsets have been proposed.

Offsetting requirements

The NSW Biodiversity Offsets Policy for Major Projects (NSW Government 2014) prescribes four types of strategies that can be used to fulfil the offset requirements:

- offsetting through a site secured stewardship (formerly known as biobanking) agreement
- purchasing credits
- supplementary measures following the rules prescribed in Appendix B of the policy
- a monetary contribution into the Biodiversity Conservation Fund

Revised Offset Strategy

The offset strategy presented in the EIS comprised two components:

- A biodiversity offset, as described in Chapter 13 of the EIS and Appendix F6 to the EIS, and
- A protected lands values offset, comprising the Warragamba Offset Program, as described in Section 20.7 in Chapter 20 of the EIS.

The revised offset strategy retains these two components as described in the EIS but includes a change to the delivery of biodiversity offsets arising from submissions and further consultation with the Department of Planning and Environment and other agencies during preparation of the Submissions Report and Preferred Infrastructure Report.

The Warragamba Offset Program approach presented in the EIS was to target the purchase of land suitable for inclusion in the National Park estate and meet both biodiversity and protected land values offset goals.

The principal change to the delivery of biodiversity offsets is by the identification and costing of a series on-park management actions that would deliver a biodiversity benefit within the national park estate equivalent to the quantum of biodiversity credits to be retired.

The protected lands values offset, which included purchasing and managing new lands, would target sites that would meet agreed protected lands values.

Any land containing suitable offsets must also be appropriate for the National Park estate and supported by National Parks and Wildlife Service for this purpose.

It is intended that, as a minimum, the quantum of land required to compensate for impact on national parks (including the affected part of the Greater Blue Mountains World Heritage Area) will be equivalent to or greater than the Project upstream impact area of around 1,400 hectares.

This would incorporate a minimum area of 304 hectares containing constituent values for the Outstanding Universal Values to offset potential impacts to the World Heritage Area.

The offset strategy is consistent with the NSW Revocation, Recategorisation and Road Adjustment Policy**, and would contribute to national parks and World Heritage values impacted by the Project. It should be noted that the Project does not propose any recategorisation of land under the policy and complies with the requirements of the Secretary of the previous Department of Planning, Industry and Environment.

While the assessment of impacts has been undertaken in accordance with the NSW Bilateral Agreement with the Commonwealth Government for assessment of matters of national environmental significance, the offset strategy has also considered the Commonwealth offsetting principles*** in its development.

* NSW Government (2014) NSW Biodiversity Offsets Policy for Major Projects. State Government of NSW and Office of Environment and Heritage. Sydney

** <https://www.environment.nsw.gov.au/topics/parks-reserves-and-protected-areas/park-policies/revocation-recategorisation-and-road-adjustment>

*** 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, Canberra.

Ask a Question

Visit the project portal and virtual engagement room: www.waternsw.com.au/wdr

Free call: 1800 932 066

Email: wdr@waternsw.com.au



Toll-free Service

If you need help understanding this information, please contact the Translating and Interpreting Service on 131 450 and ask them to call us on 1800 932 066.