

Planning Secretary's Environmental Assessment Requirements

Section 5.16 of the *Environmental Planning and Assessment Act 1979*

Application Number	SSI-10044
Project Name	Macquarie River Re-regulating Storage
Location	Lot 7010 DP 1020351 within Narromine Shire
Applicant	WATER NSW
Date of Issue	21/07/2020
General Requirements	<p>The environmental impact statement (EIS) must be prepared in accordance with and meet the minimum requirements of clauses 6 and 7 of Schedule 2 of the Environmental Planning and Assessment Regulation 2000 (the Regulation).</p> <p>Notwithstanding the key issues specified below, the EIS must include an environmental risk assessment to identify the potential environmental impacts associated with the infrastructure.</p> <p>The project requires approval under the EPBC Act and is being assessed under the Bilateral Agreement. The EIS must address the requirements of Attachment A.</p> <p>Where relevant, the assessment of key issues below, and any other significant issues identified in the risk assessment, must include:</p> <ul style="list-style-type: none"> - adequate baseline data - consideration of the potential cumulative impacts due to other developments in the vicinity (completed, underway or proposed); - measures to avoid, minimise and if necessary, offset predicted impacts, including detailed contingency plans for managing any significant risks to the environment; and <p>The EIS must also be accompanied by a report from a qualified quantity surveyor providing:</p> <ul style="list-style-type: none"> - a detailed calculation of the capital investment value (CIV) (as defined in clause 3 of the Regulation) of the proposal, including details of all assumptions and components from which the CIV calculation is derived. The report shall be prepared on company letterhead and indicate applicable GST component of the CIV; - an estimate of jobs that will be created during the construction and operational phases of the proposed infrastructure; and - certification that the information provided is accurate at the date of preparation.
Key issues	<p>The EIS must address the following specific matters:</p> <p>1. Statutory and Strategic Context</p> <p>Address the statutory provisions applying to the infrastructure contained in all relevant environmental planning instruments, including:</p> <ul style="list-style-type: none"> o State Environmental Planning Policy (State & Regional Development) 2011 o State Environmental Planning Policy (Infrastructure) 2007 o State Environmental Planning Policy (Remediation of Land) 2019

- o Draft State Environmental Planning Policy (Remediation of Land)
- o Draft State Environmental Planning Policy (Environment)
- o State Environmental Planning Policy (Primary Production and Rural Development) 2019
- o State Environmental Planning Policy (Koala Habitat Protection) 2019
- o Narromine Local Environment Plan 2011

Address the relevant planning provisions, goals and strategic planning objectives in the following:

- o NSW State Priorities
- o Narromine Development Control Plan 2011
- o NSW Floodplain Development Manual 2005
- o State Infrastructure Strategy 2018 – 2038 Building the Momentum
- o Crime Prevention Through Environmental Design Principles
- o Central West and Orana Regional Plan 2036
- o Narromine Agricultural lands Strategy 2013
- o Residential and Large Lot Residential Land Use Strategy 2018
- o NSW Aquifer Interference Policy 2012
- o Guidelines for Controlled Activities on Waterfront Land 2018
- o NSW Weirs Policy 1997
- o Policy and Guidelines for Fish Habitat Conservation and Management (update 2013)

2. Water

Include a thorough description of the existing environmental conditions and hydrological regime, including:

- o Mapping of rivers, streams, wetlands, estuaries, and groundwater potentially impacted by the project.
- o River channel form, relevant River Styles, geomorphic processes including sediment transmission rates, storage and reworking, and in-channel sediment features.
- o Floodplain ecosystems and ecological assets associated with all downstream river that will see altered flow.
- o Instream ecosystems, assets and functions associated with all upstream and downstream river that will see altered flow.
- o Relationships between the channel and adjacent floodplains, including a description of the frequency and duration of overbank flows, sediment trapping and sediment features on the floodplain and any river levees.
- o Water quality baseline data for the water resource likely to be impacted by

the development. This should include relevant physical and chemical parameters such as temperature, EC, pH, turbidity, nutrients and dissolved oxygen as well as any available major ion and toxicant data.

- o Highly connected alluvial aquifers and their responses to river flows.

Include a thorough assessment of the hydrological impacts of the proposed weir, including:

- o Catchment scale water balance and projected alterations in water supply and demand management.
- o The extent of the proposed weir pool.
- o Impacts during construction on all affected surface and groundwater resources, ensuring compliance with regional Water Sharing Plans and Water Resource Plans, and with sustainable diversion limits of the Murray-Darling Basin Plan.
- o An assessment of the impact of the project to the Environmental Flow Requirements downstream as stated in the relevant Long-Term Watering Plan (LTWP) prepared by DPIE EES as part of basin Plan requirements.
- o Design criteria relating to flow hydrographs, release rules, any proposed translucency measures and other alteration of riverine hydrology, flow energy and sediment transport.
- o Assessment of impact on land salinization due to rising groundwater table induced by raised pool level in the storage, and mitigation of impacts.
- o An assessment of the potential impact on groundwater and surface water users and details of how existing water rights will be protected.
- o Changes to environmental water availability, both regulated/licensed and unregulated/rules-based sources of such water, specifically;
 - o assessment of impacts to the volume, reliability and effectiveness of Planned Environmental Water in the catchment downstream of the work.
 - o assessment of impact to volume, reliability, effectiveness or deliverability of Held Environmental Water assets in the catchment downstream of the works.
 - o any water substitution effects of the removal of surplus or tributary flows from the catchment that may then require held or discretionary planned environmental water to make up the shortfall

Include a thorough assessment of the water quality impacts of the proposed weir, including:

- o The ambient NSW Water Quality Objectives (NSW WQO) and environmental values for the river, including the indicators and associated trigger values or criteria for the identified environmental values
- o The rainfall event that the water quality protection measures will be designed to cope with
- o The significance of any identified impacts including consideration of the

relevant ambient water quality outcomes

- o How construction and operation of the project will, to the extent that the project can influence, ensure that
 - o where the NSW WQOs for receiving waters are currently being met they will continue to be protected; and
 - o where the NSW WQOs are not currently being met, activities will work toward their achievement over time
- o identify proposed monitoring locations, monitoring frequency and indicators of surface and groundwater quality.

Relevant Policies and Guidelines:

- o NSW Water Quality and River Flow Objectives at <http://www.environment.nsw.gov.au/ieo/>
- o Using the ANZECC Guidelines and Water Quality Objectives in NSW (DEC, 2006)
- o Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZG, 2018)
- o Approved Methods for the Sampling and Analysis of Water Pollutants in NSW (DECC, 2008)

3. Land

Include an assessment of the impacts of the project on soils and land capability of the site and surrounds, including:

- o stability;
- o acid sulphate soils;
- o salinity; and
- o soil erosion and sediment transport.

Include an assessment on landform including the short- and long-term geotechnical stability of any new landforms and any seismic or subsidence impacts.

4. Flooding

Identify flood risk on-site (detailing the most recent flood studies for the project area) and consideration of any relevant provisions of the NSW Floodplain Development Manual (DIPNR, 2005), including the potential effects of climate change, sea level rise and an increase in rainfall intensity. If there is a material flood risk, include design solutions for mitigation.

Map features relevant to flooding as described in the Floodplain Development Manual 2005 (NSW Government 2005), including:

- o Flood prone land.
- o Flood planning area, the area below the flood planning level.
- o Hydraulic categorisation (floodways and flood storage areas).

- o Flood hazard

Describe flood assessment and modelling undertaken in determining the design flood levels for events, including a minimum of the 5% Annual Exceedance Probability (AEP), 1% AEP, flood levels and the probable maximum flood, or an equivalent extreme event.

Model the effect of the proposed project (including fill) on current flood behaviour for a range of design events. This includes the 0.5% and 0.2% AEP year flood events as proxies for assessing sensitivity to an increase in rainfall intensity of flood producing rainfall events due to climate change.

Provide flood modelling which considers and documents:

- o Existing council flood studies in the area and examine consistency to the flood behaviour documented in these studies.
- o The impact on existing flood behaviour for a full range of flood events including up to the probable maximum flood, or an equivalent extreme flood.
- o Impacts of the development on flood behaviour resulting in detrimental changes in potential flood affectation of other developments or land. This may include redirection of flow, flow velocities, flood levels, hazard categories and hydraulic categories.
- o Relevant provisions of the NSW Floodplain Development Manual 2005.

Assess the impacts on the proposed project on flood behaviour, including:

- o Whether there will be detrimental increases in the potential flood affectation of other properties, assets and infrastructure.
- o Consistency with Council floodplain risk management plans.
- o Consistency with any Rural Floodplain Management Plans.
- o Compatibility with the flood hazard of the land.
- o Compatibility with the hydraulic functions of flow conveyance in floodways and storage in flood storage areas of the land.
- o Whether there will be adverse effect to beneficial inundation of the floodplain environment, on, adjacent to or downstream of the site.
- o Whether there will be direct or indirect increase in erosion, siltation, destruction of riparian vegetation or a reduction in the stability of river-banks or watercourses.
- o Any impacts the development may have upon existing community emergency management arrangements for flooding.
- o Whether the proposal incorporates specific measures to manage risk to life from flood.
- o Emergency management, evacuation and access, and contingency measures for the development considering the full range of flood risk (based upon the probable maximum flood or an equivalent extreme flood event).
- o Any impacts the development may have on the social and economic costs to the community as consequence of flooding.

5. Aboriginal Heritage

Identify and describe the Aboriginal cultural heritage values that exist across the site and any other area which the project could directly or indirectly impact in an Aboriginal Cultural Heritage Assessment Report (ACHAR). The ACHAR must:

- o be prepared in consultation with the local Aboriginal community and other relevant stakeholders, having regard to the Aboriginal Cultural Heritage Consultation Requirements for Proponents (OEH, 2010);
- o demonstrate attempts to avoid impact upon cultural heritage values and identify any conservation outcomes; and
- o where impacts are unavoidable the ACHAR must outline measures proposed to mitigate impacts.

6. Non-Aboriginal Heritage

Provide a heritage assessment including but not limited to an assessment of impacts to State and local heritage. Where impacts to State or locally significant heritage items are identified, the assessment shall:

- o outline the proposed mitigation and management measures (including measures to avoid significant impacts and an evaluation of the effectiveness of the mitigation measures) generally consistent with the NSW Heritage Manual (1996),
- o be undertaken by a suitably qualified heritage consultant(s) (note: where archaeological excavations are proposed the relevant consultant must meet the NSW Heritage Council's Excavation Director criteria),
- o include a statement of heritage impact for all heritage items (including significance assessment),
- o consider impacts including, but not limited to, vibration, demolition, archaeological disturbance, altered historical arrangements and access, landscape and vistas, and architectural noise treatment (as relevant), and
- o where potential archaeological impacts have been identified develop an appropriate archaeological assessment methodology, including research design, to guide

7. Social Impacts

Identify and assess the potential social impacts of the project, considering affected communities and other relevant stakeholders, including:

- o the significance of positive, negative and cumulative social impacts considering likelihood, extent, duration, severity/scale, sensitivity/importance, and level of concern/interest.
- o proposed mitigation measures to address negative social impacts and any proposed enhancement measure.
- o proposed means of monitoring and managing social impacts over time.
- o the existing recreational opportunities associated with the site, how these will be impacted by the project, and any design measures to improve the recreational amenity of the site.
- o detail the impacts on land users, including private landowners and users of

public recreational facilities.

8. Ecologically Sustainable Development (ESD)

Detail how ESD principles (as defined in clause 7(4) of Schedule 2 of the Regulation) will be incorporated in the proposal.

Include an assessment against an accredited ESD rating system or an equivalent program of ESD performance. This should include a minimum rating scheme target level.

Relevant Policies and Guidelines:

- o NSW and ACT Government Regional Climate Modelling (NARClIM) climate change projections.

9. Biodiversity Assessment

Biodiversity impacts related to the proposed development are to be assessed in accordance with Section 7.9 of the Biodiversity Conservation Act 2017 the Biodiversity Assessment Method and documented in a Biodiversity Development Assessment Report (BDAR). The BDAR must include information in the form detailed in the Biodiversity Conservation Act 2016 (s6.12), Biodiversity Conservation Regulation 2017 (s6.8) and Biodiversity Assessment Method.

The BDAR must document the application of the avoid, minimise and offset framework including assessing all direct, indirect and prescribed impacts in accordance with the Biodiversity Assessment Method.

The BDAR must include details of the measures proposed to address the offset obligation as follows:

- o the total number and classes of biodiversity credits required to be retired for the development/project
- o the number and classes of like-for-like biodiversity credits proposed to be retired
- o the number and classes of biodiversity credits proposed to be retired in accordance with the variation rules
- o any proposal to fund a biodiversity conservation action
- o any proposal to make a payment to the Biodiversity Conservation Fund.

If seeking approval to use the variation rules, the BDAR must contain details of the reasonable steps that have been taken to obtain requisite like-for-like biodiversity credits.

The BDAR must:

- o be submitted with all spatial data associated with the survey and assessment as per Appendix 11 of the BAM.
- o be prepared by a person accredited in accordance with the Accreditation Scheme for the Application of the Biodiversity Assessment Method Order 2017 under s6.10 of the Biodiversity Conservation Act 2016.
- o include an aquatic ecological assessment from Burrendong Dam to the Macquarie Marshes that addresses all direct and indirect impacts of the Macquarie River Re-Regulating Storage on Key Fish Habitat and associated flora and fauna including threatened species, populations, and communities during construction and operation for the life of the asset.

- o include an Aquatic Biodiversity Offsets Strategy, that is fully costed, to mitigate and manage impacts of the Macquarie River Re-Regulating Storage during construction and subsequent operation, focusing on protecting and improving the biodiversity and conservation values of the Macquarie River Catchment below Burrendong Dam, its biota, and associated riparian zones in the medium to long term.
- o include an assessment of the design, construction, operation, and monitoring of a suitable fish passage and fishways at the Macquarie River Re-Regulating Storage, including Gin Gin Weir, that ensure the safe and effective upstream and downstream movement of the Macquarie native fish community across all flows.
- o details of the rehabilitation of the site and revegetation of disturbed areas are to be considered, with the manner of long-term management/security of the rehabilitation areas detailed. The Biodiversity Development Assessment Report should include details of stakeholder consultation where offsetting is proposed.
- o Include an assessment of impacts on groundwater dependent ecosystems.

Note: Notwithstanding these requirements, the Biodiversity Conservation Act 2016 requires that State Significant Development Applications be accompanied by a Biodiversity Development Assessment Report unless otherwise specified under the Act.

10. Contamination

Assess and quantify any soil and groundwater contamination and demonstrate that the site is suitable for the proposed use in accordance with SEPP 55.

Undertake a hazardous materials survey of all existing structures and infrastructure prior to any demolition or site preparation works.

Relevant Policies and Guidelines:

- o Managing Land Contamination: Planning Guidelines - SEPP 55 Remediation of Land (DUAP, 1998)
- o Sampling Design Guidelines (EPA, 1995)
- o Guidelines for Consultants Reporting on Contaminated Sites (OEH, 2011)
- o National Environment Protection (Assessment of Site Contamination) Measure (National Environment Protection Council, as amended 2013)

11. Waste

Assess the predicted waste generated from the project during demolition and construction, including:

- o classification of the waste in accordance with the current guidelines;
- o estimates / details of the quantity of each classification of waste to be generated during the construction of the project, including bulk earthworks and spoil balance;
- o handling of waste including measures to facilitate segregation and prevent cross contamination;

- o management of waste including estimated location and volume of stockpiles;
- o waste minimisation and reuse;
- o lawful disposal or recycling locations for each type of waste; and
- o contingencies for the above, including managing unexpected waste volumes.

Assess the potential environmental impacts from the excavation, handling, storage and transport of the waste particularly with relation to sediment/leachate control, noise and dust.

Details the measures that would be implemented to ensure that the construction and operation of the project is consistent with the aims, objectives and guidance in the NSW Waste Avoidance and Resource Recovery Strategy 2014-2021.

Relevant Policies and Guidelines:

- o Waste Classification Guidelines (EPA, 2014)
- o EPA's Waste Classification Guidelines (as in force from time to time)
- o NSW Sustainable Design Guidelines Version 3.0 (TfNSW, 2013)
- o NSW Waste Avoidance and Resource Recovery Strategy 2014-2021

12. Sediment, Erosion and Dust Controls

Detail measures and procedures to minimise and manage the generation and off-site transmission of sediment, dust and fine particles.

Relevant Policies and Guidelines:

- o Managing Urban Stormwater - Soils & Construction Volume 1 2004 (Landcom)
- o Approved Methods for the Modelling and Assessment of Air Pollutants in NSW (EPA)
- o Guidelines for development adjoining land managed by the Office of Environment and Heritage (OEH, 2013)

13. Bushfire

Address bushfire hazard and, if relevant, prepare a report that addresses the requirements for Special Fire Protection Purpose Development as detailed in Planning for Bush Fire Protection 2006 (NSW RFS).

14. Design

Address the scale and design of the proposed development, considering the impacts upon the visual amenity of the site, including:

- o Identify how services and plant are integrated into the overall design of the proposed development
- o Provide details of any proposed landscaping, including the number of trees to be removed and the number of trees to be planted.
- o Identify any services to be relocated or rerouted to facilitate the development

- o Address CPTED Principles.

15. Transport

Provide a Traffic Impact Assessment (TIA) prepared by a suitably qualified person in accordance with the Austroads Guide to Traffic Management, TfNSW Supplements to Austroads and the RTA Guide to Traffic Generating Developments. The TIA is to be developed in consultation with Transport for NSW.

Identify controls for transport and use of any dangerous goods in accordance with State Environmental Planning Policy No. 33 – Hazardous and Offensive Development, the Australian Dangerous Goods Code and Australian Standard 4452 Storage and Handling of Toxic Substances.

Propose a Driver Code of Conduct for heavy vehicles and peak project employee periods which could include, but not be limited to:

- o Safety initiatives for project transportation through residential areas and/or school zones (including school bus drop off and pick up locations along the route).
- o An induction process for vehicle operators and regular toolbox meetings.
- o A public complaint resolution and disciplinary procedure.
- o Platooning of haulage vehicles is to be avoided.

Provide a Waterway Management Plan prepared in consultation with Transport for NSW, including details of any temporary or permanent river closures, or exclusion zones.

Relevant Policies and Guidelines:

- o EIS Guidelines - Road and Related Facilities (Department of Urban Affairs and Planning (DUAP), 1996)
- o NSW Planning Guidelines for Walking and Cycling (Department of Infrastructure, Planning and Natural Resources (DIPNR), 2004)
- o Austroads Guide to Traffic Management

16. Noise and Vibration

Provide a quantitative assessment of the main noise and vibration generating sources during demolition, site preparation, bulk excavation, and construction. Outline measures to minimise and mitigate the potential noise impacts on surrounding occupiers of land.

Relevant Policies and Guidelines:

- o NSW Noise Policy for Industry 2017 (NSW Environment Protection Authority (EPA))
- o Interim Construction Noise Guideline (Department of Environment and Climate Change, 2009)
- o Assessing Vibration: A Technical Guideline 2006 (Department of Environment and Conservation, 2006)

17. Staging

Provide details regarding the staging of the proposed development (if any).

	<p>18. Construction Hours</p> <p>Identify proposed construction hours and provide details of the instances where it is expected that works will be required to be carried out outside the standard construction hours.</p>
<p>Plans and Documents</p>	<p>The EIS must include all relevant plans, architectural drawings, diagrams and relevant documentation required under Schedule 1 of the Regulation. Provide these as part of the EIS rather than as separate documents.</p> <p>In addition, the EIS must include the following:</p> <ul style="list-style-type: none"> - high quality maps of the subject site and proposal; - detailed plans, sections and elevation of the proposal; - a site survey plan, showing existing levels, location and height of existing structures and site boundaries - technical details and associated data for any completed surface and groundwater modelling. - a Sediment and Erosion Control Plan
<p>Consultation</p>	<p>During the preparation of the EIS, you must consult with the relevant local, State or Commonwealth Government authorities, service providers, community groups and affected landowners.</p> <p>In particular you must consult with:</p> <ul style="list-style-type: none"> - Narromine Shire Council - Department of Planning, Industry and Environment - Crown Lands - Transport for NSW - Maritime - NSW State Emergency Service <p>The EIS must describe the consultation process and the issues raised, and identify where the design of the infrastructure has been amended in response to these issues. Where amendments have not been made to address an issue, a short explanation should be provided.</p>
<p>Further consultation after 2 years</p>	<p>If you do not lodge an EIS for the infrastructure within 2 years of the issue date of these SEARs, you must consult further with the Planning Secretary in relation to the preparation of the EIS.</p>
<p>References</p>	<p>The assessment of the key issues listed above must take into account relevant guidelines, policies, and plans as identified. While not exhaustive, the following attachment contains a list of some of the guidelines, policies, and plans that may be relevant to the environmental assessment of this proposal.</p>

Attachment A
Guidelines for preparing assessment documentation relevant to the EPBC Act for proposals being assessed under the NSW Assessment Bilateral Macquarie River Re-regulating Storage (2020/8752)

On 25 June 2020, the delegate of the Commonwealth Minister for the Environment determined that the Macquarie River Re-regulating Storage is a controlled action requiring approval under the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act). This Guideline outlines the requirements for assessment in accordance with the EPBC Act. This Guideline should be read in conjunction with the Secretary's Environmental Assessment Requirements for SSI 10044.

Introduction

1. These guidelines provide information on assessment requirements in relation to matters of national environmental significance (MNES) in accordance with the *New South Wales Bilateral Agreement relating to environmental assessment (2020)*. To meet requirements, the project must be assessed in the manner specified in Schedule 1 to that agreement including that the assessment documentation contains:
 - i. An assessment of all impacts that the action is likely to have on each matter protected by a provision of Part 3 of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).
 - ii. Enough information about the proposal and its relevant impacts to allow the Commonwealth Minister to make an informed decision on whether or not to approve.
 - iii. Information addressing the matters outlined in Schedule 4 of the *Environment Protection and Biodiversity Conservation Regulations (2000)*.
2. In the circumstance that a proposal has been determined to be a 'controlled action' requiring full assessment, the decision will identify which MNES protected under the EPBC Act have triggered for assessment. These are called the controlling provisions. Proponents are only required to provide an assessment of protected matters under the controlling provisions that have been triggered. Following is the list of controlling provisions:
 - wetlands of international importance (sections 16 and 17B)
 - listed threatened species and communities (sections 18 and 18A)
 - listed migratory species (sections 20 and 20A).
3. The proponent must consider each of the protected matters under the triggered controlling provisions that may be impacted by the action. The Department of Agriculture, Water and Environment has provided list of threatened species and communities that are considered to be at risk of impact from the proposal at **Attachment 1**. Note that this may not be a complete list and it is the responsibility of the proponent to undertake an analysis of the relevant impacts and ensure all protected matters that are likely to be impacted are assessed for the Commonwealth Minister's consideration.

Relevant Regulations

4. Assessment documentation prepared for the purposes of approval under the EPBC Act must, in addition to providing sufficient information for a decision, address the matters outlined in Schedule 4 of the *Environment Protection and Biodiversity Conservation Regulations 2000* (Cth). The following includes requirements that have been identified as additional to the requirements prescribed in Schedule 2 of the *NSW Environmental Planning and Assessment Regulations 2000*. Proponents are advised to check that requirements in Schedule 4 of the EPBC Regulations have been appropriately addressed.
- http://www.austlii.edu.au/au/legis/cth/consol_reg/epabcr2000697/

General Requirements

Project Description

5. The title of the action, background to the action of the action and current status.
6. The precise location and description of all works to be undertaken (including associated offsite works and infrastructure), structures to be built or elements of the action that may have impacts on MNES.
7. How the action relates to any other actions that have been, or are being taken in the region affected by the action.
8. How the works are to be undertaken and design parameters for those aspects of the structures or elements of the action that may have relevant impacts on MNES.

Impacts

9. The EIS must include an assessment of the relevant impacts of the action on the matters protected by the controlling provisions, including:
 - i. a description and detailed assessment of the nature and extent of the likely direct, indirect and consequential impacts, including short term and long term relevant impacts;
 - ii. a statement whether any relevant impacts are likely to be unknown, unpredictable or irreversible;
 - iii. analysis of the significance of the relevant impacts; and
 - iv. any technical data and other information used or needed to make a detailed assessment of the relevant impacts.

Avoidance, mitigation and offsetting

10. For each of the relevant matters protected that are likely to be significantly impacted by the action, the EIS must provide information on proposed avoidance and mitigation measures to manage the relevant impacts of the action including:
 - i. a description, and an assessment of the expected or predicted effectiveness of the mitigation measures,
 - ii. any statutory policy basis for the mitigation measures;
 - iii. the cost of the mitigation measures;

- iv. an outline of an environmental management plan that sets out the framework for continuing management, mitigation and monitoring programs for the relevant impacts of the action, including any provisions for independent environmental auditing;
 - v. the name of the agency responsible for endorsing or approving each mitigation measure or monitoring program.
11. Where a significant residual adverse impact to a relevant protected matter is considered likely, the EIS must provide information on the proposed offset strategy, including discussion of the conservation benefit associated with the proposed offset strategy.
12. For each of the relevant matters likely to be impacted by the action the EIS must provide reference to, and consideration of, relevant Commonwealth guidelines and policy statements including any:
- i. conservation advice or recovery plan for the species or community,
 - ii. relevant threat abatement plan for a process that threatens the species or community
 - iii. wildlife conservation plan for the species
 - iv. management plan for Ramsar wetland
 - v. management plan for a World Heritage property or National Heritage place;
 - vi. Marine Bioregional Plan;
 - vii. any strategic assessment.

[Note: the relevant guidelines and policy statements for each species and community are available from the Department of the Environment Species Profiles and Threats Database. <http://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl>]

13. In addition to the general requirements described above, specific information is required with respect to each of the determined controlling provisions. These requirements are outlined in paragraphs 14-20.

Key Issues

Biodiversity (threatened species and communities and migratory species)

14. The EIS must identify each EPBC Act listed threatened species and community and migratory species likely to be impacted by the action. For any species and communities that are likely to be impacted, the proponent must provide a description of the nature, quantum and consequences of the impacts. For species and communities potentially located in the project area or in the vicinity that are not likely to be impacted, provide evidence why they are not likely to be impacted.
15. For each of the EPBC Act listed threatened species and communities and migratory species likely to be impacted by the action the EIS must provide a separate:
- a. description of the habitat (including identification and mapping of suitable breeding habitat, suitable foraging habitat, important populations and habitat critical for survival), with consideration of, and reference to, any relevant Commonwealth guidelines and policy statements including listing advice, conservation advice and recovery plans;

- b. details of the scope, timing and methodology for studies or surveys used and how they are consistent with (or justification for divergence from) published Australian Government guidelines and policy statements;
- c. description of the relevant impacts of the action having regard to the full national extent of the species or community's range; and
- d. description of the specific proposed avoidance and mitigation measures to deal with relevant impacts of the action;
- e. identification of significant residual adverse impacts likely to occur after the proposed activities to avoid and mitigate all impacts are taken into account;
- f. a description of any offsets proposed to address residual adverse significant impacts and how these offsets will be established.
- g. details of how the current published NSW Biodiversity Assessment Method (BAM) has been applied in accordance with the objects of the EPBC Act to offset significant residual adverse impacts; and
- h. details of the offset package to compensate for significant residual impacts including details of the credit profiles required to offset the action in accordance with the FBA and/or mapping and descriptions of the extent and condition of the relevant habitat and/or threatened communities occurring on proposed offset sites;

[Note: For the purposes of approval under the EPBC Act, it is a requirement that offsets directly contribute to the ongoing viability of the specific protected matter impacted by a proposed action and deliver an overall conservation outcome that improves or maintains the viability of the MNES i.e. 'like for like'. In applying the BAM, residual impacts on EPBC Act listed threatened ecological communities must be offset with Plant Community Type(s) (PCT) that are ascribed to the specific EPBC listed ecological community. PCTs from a different vegetation class will not generally be acceptable as offsets for EPBC listed communities.]

16. Any significant residual impacts not addressed by the BAM may need to be addressed in accordance with the Environment Protection and Biodiversity Conservation Act 1999 Environmental Offset Policy. <http://www.environment.gov.au/epbc/publications/epbc-act-environmental-offsets-policy>.

Wetland of International Importance (Ramsar wetlands)

17. The EIS must identify and describe the location, extent and ecological characteristic of the Ramsar wetland that is likely to be impacted by all stages of the proposed action.
18. The assessment of impacts should include information on:
- i. areas of wetland being destroyed or substantially modified;
 - ii. substantial and measurable changes to the hydrological regime of the wetlands, for example a substantial change to the volume, timing, duration or frequency of ground and surface water flows to and within the wetland;
 - iii. the habitat or lifecycle of native species, including invertebrate fauna and fish species, dependent upon the wetland that are at risk of being affected;

- iv. substantial and measurable change in water quality of the wetlands, for example a substantial change in the level of salinity, pollutants, nutrients or temperature that may adversely impact on biodiversity, ecological integrity and social amenity or human health;
- v. invasive species that may be harmful to the ecological character of the wetlands, if introduced or spread as a result of the action.
- vi. A description of any mitigation and management measures proposed to protect or enhance the affected elements of the ecological character of the impacted Ramsar wetland.

19. Where a significant residual adverse impact to the ecological character of a Ramsar wetland is considered likely the EIS must provide information on the proposed offset strategy. The offset strategy must:

- i. include a discussion and supporting evidence of the conservation benefit associated with the proposed offset strategy. The conservation benefit must demonstrate, at a minimum, how the proposed offset will improve the integrity and resilience of the ecological character of the impacted Ramsar wetland; and
- ii. be consistent with the *Environment Protection and Biodiversity Conservation Act 1999 Environmental Offset Policy (2012)*:
www.environment.gov.au/epbc/publications/epbc-act-environmental-offsets-policy or an endorsed state policy.

Other approvals and conditions

20. Information in relation to any other approvals or conditions required must include the information prescribed in Schedule 4 Clause 5 (a) (b) (c) and (d) of the EPBC Regulations 2000.

Environmental Record of person proposing to take the action

21. Information in relation to the environmental record of a person proposing to take the action must include details as prescribed in Schedule 4 Clause 6 of the EPBC Regulations 2000.

Information Sources

22. For information given in an EIS, the EIS must state the source of the information, how recent the information is, how the reliability of the information was tested; and what uncertainties (if any) are in the information.

REFERENCES

- *Environment Protection and Biodiversity Conservation Act 1999* - section 51-55, section 96A(3)(a)(b), 101A(3)(a)(b), section 136, section 527E
- *Environment Protection and Biodiversity Conservation Regulations 2000 Schedule 4*
- NSW Assessment Bilateral Agreement (2015) - Item 18.1, Item 18.5, Schedule 1
- *Matters of National Environmental Significance - Significant impact guidelines 1.1* (2013) EPBC Act
- *Environment Protect and Biodiversity Conservation Act 1999 Environmental Offsets Policy* October 2012

Attachment 1 – Protected matters relevant to the Macquarie River Re-regulating Storage Project (2020/8752)

Based on the information available in the referral, the Department of Agriculture, Water and Environment (DAWE) considers the proposed action is likely to have a significant impact on the following matters of national environmental significance, including but not limited to:

Listed threatened species

- Australasian Bittern (*Botaurus poiciloptilus*) – endangered
- Curlew Sandpiper (*Calidris ferruginea*) – critically endangered
- Superb Parrot (*Polytelis swainsonii*) – vulnerable
- Australian Painted Snipe (*Rostratula australis*) – endangered
- Trout Cod (*Maccullochella macquariensis*) – endangered
- Murray Cod (*Maccullochella peelii*) – vulnerable
- Silver Perch (*Bidyanus bidyanus*) – critically endangered.

Listed migratory species

- Common Sandpiper (*Actitis hypoleucos*)
- Sharp-tailed Sandpiper (*Calidris acuminata*)
- Curlew Sandpiper (*Calidris ferruginea*)
- Red-Necked Stint (*Calidris ruficollis*)
- Latham's Snipe (*Gallinago hardwickii*)
- Bar-tailed Godwit (*Limosa lapponica*)
- Black-tailed Godwit (*Limosa limosa*)
- Wood Sandpiper (*Tringa glareola*)
- Common Greenshank (*Tringa nebularia*)
- Marsh Sandpiper (*Tringa stagnatilis*)
- Caspian Tern (*Sterna caspia*)
- Gull-billed Tern (*Sterna nilotica*)
- Eastern Osprey (*Pandion cristatus*)
- Glossy Ibis (*Plegadis falcinellus*).

Ramsar wetlands

- Macquarie Marshes.

DAWE also considers that there is a real chance or possibility that the project's activities will significantly impact on the following:

- Chariot Wheels (*Maireana cheelii*) - vulnerable
- Slender Darling Pea (*Swainsona murrayana*) – vulnerable

Sloane's Froglet (*Crinia sloanei*) – endangered.