Scoping Requirements Lindsay Island and Wallpolla Island Floodplain Restoration Projects Environment Effects Statement

Environment Effects Act 1978





Environment, Land, Water and Planning

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List of abbreviations

CHMP	Cultural heritage management plan
DELWP	Department of Environment, Land, Water and Planning
EES	Environment effects statement
EMF	Environmental management framework
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999
ha	Hectares
MNES	Matters of national environmental significance
PASS	Potential acid sulphate soils
TRG	Technical reference group
VMFRP	Victorian Murray Floodplain Restoration Project



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1. Introduction

In light of the potential for significant environmental effects, on 6 December 2020 the Minister for Planning determined under the *Environment Effects Act 1978* that Lower Murray Urban and Rural Water Corporation (LMW) is to prepare a single environment effects statement (EES) for the proposed Lindsay Island Floodplain Restoration Project and Wallpolla Island Floodplain Restoration Project (the projects). The purpose of the EES is to provide a sufficiently detailed description of both projects, articulate their benefits and assess their potential effects on the environment.¹ The EES will inform and seek feedback from the public and stakeholders. The Minister will issue an assessment of both project's environmental effects under the Environment Effects Act to conclude the EES process. The Minister's assessment will then inform statutory decision-makers for both projects.

These Scoping Requirements for the Lindsay Island and Wallpolla Island Floodplain Restoration Projects Environment Effects Statement set out the proposed specific matters to be investigated and documented in the EES. The scoping requirements presented here were finalised following consideration of submissions received during the public exhibition of the draft scoping requirements in April-May 2021. While the scoping requirements are intended to cover all relevant matters, the EES will also need to address other issues that emerge during the EES investigations, especially potential impacts and environmental issues relevant to statutory decisions that will be informed by the assessment.

1.1 The projects

The Lindsay Island Floodplain Restoration Project and Wallpolla Island Floodplain Restoration Project are parts of the Victorian Murray Floodplain Restoration Project (VMFRP). The VMFRP consists of nine discrete projects that aim to return a more natural inundation regime to the Murray River in Victoria to achieve specific ecological objectives. The VMFRP is being implemented as part of Victoria's obligations under the Murray Darling Basin Plan (Basin Plan). The VMFRP allows Basin Plan objectives to be met without further water purchases.

The projects propose works to restore a more natural flood regime to improve the ecological condition across 5,289 hectares (ha) of the Murray River Floodplain at Lindsay Island and Lake Wallawalla (Figure 1) and across 2,672 ha of the Murray River Floodplain at Wallpolla Island (Figure 2). The proposed works include construction of large and small regulators, containment structures, drop structures, temporary cofferdams, spillways, culverts, pump suction line, hardstand areas, new access tracks and realignments/upgrades to existing access tracks. The projects will also establish borrow pits to supply fill material to support construction.

1.2 Minister's requirements for this EES

In light of the potential for significant environmental effects, the Minister decided that an EES is required to assess the potential environmental effects of the projects. The Minister published procedures and requirements applicable to the preparation of the EES, in accordance with section 8B(5) of the Environment Effects Act (see Appendix A). In the procedures and requirements, the Minister identified that a single EES is to document investigations and integrated assessment of the potential environmental effects of the projects. The investigations and assessments are to include feasible project alternatives and design refinements (e.g. alternative project layouts, siting of infrastructure, management measures, project staging and timing and/or extent of inundation events) to avoid, minimise, and manage effects, particularly for:

- adverse effects on biodiversity and ecological values within and near the project area, including effects
 of exacerbated threatening processes, on native vegetation, listed threatened ecological communities
 and protected species;
- intended ecological benefits and how they relate to the predicted adverse effects on specific biodiversity values;
- effects on Aboriginal and historic cultural heritage values;
- potential effects on water environments and related beneficial uses;

^{1.} For assessment of environmental effects under the EE Act, the meaning of 'environment' includes physical, biological, heritage, cultural, social, health, safety and economic aspects (Ministerial Guidelines, p. 2).



- effects on groundwater that may result in adverse changes to groundwater dependent ecosystems;
- effects on the socio-economic environment, including recreational and commercial (apiary) activities in the Murray-Sunset National Park and River Murray Reserve;
- effects on existing landscape values; and
- potential cumulative effects, including for threatened flora and fauna, hydrology and groundwater values, with particular regard to currently operating, approved and proposed environmental watering projects in the region.

These draft scoping requirements provide further detail on the matters to be in investigated in the EES as required by the *Ministerial guidelines for assessment of environmental effects under the Environment Effects Act 1978* (Ministerial Guidelines).





Figure 1: Location of the Lindsay Island Floodplain Restoration project (source: Arup).



Figure 2: Location of the Wallpolla Island Floodplain Restoration project (source: Arup).

2. Assessment process and required approvals

2.1 What is an EES?

An EES describes a project, it's rationale/benefit and its potential environmental effects. It should enable stakeholders and decision-makers to understand how the project is proposed to be implemented and the likely environmental effects of doing so. An EES has two main components

- The EES main report an integrated, plain English document that assesses the potential impacts of the project and examines avoidance, mitigation or other measures to reduce the environmental effects. The main report draws on technical studies, data and statutory requirements such as specific limits for surface water and groundwater quality and waste discharge to the environment and should clearly identify which components of the scope are being addressed throughout.
- 2. The EES technical reports specialist studies, investigations and analyses that provide the basis for the EES main report. These reports will be exhibited in full, as appendices to the main report.

2.2 The EES process

The proponent is responsible for preparing an EES, including conducting technical studies and undertaking appropriate stakeholder consultation. The Department of Environment, Land, Water and Planning (DELWP) is responsible for managing the EES process². The EES process has the following steps:

- preparation of a draft study program and draft schedule by the proponent;
- preparation and exhibition of draft scoping requirements by DELWP on behalf of the Minister with public comments received during the advertised exhibition period;
- finalisation and issuing of scoping requirements by the Minister;
- review of the proponent's EES studies and draft documentation by DELWP and a technical reference group;³
- completion of the EES by the proponent;
- review of the complete EES by DELWP to establish its adequacy for public exhibition;
- exhibition of the proponent's EES and invitation for public comment by DELWP on behalf of the Minister;
- appointment of an inquiry panel by the Minister to review the EES and public submissions received, conduct public hearings and provide a report to the Minister; and finally
- following receipt of the inquiry report, preparation of an assessment on whether the project's environmental effects are acceptable by the Minister for the consideration of statutory decision-makers.

Technical reference group

DELWP has convened a technical reference group (TRG) of state and commonwealth government agencies, registered Aboriginal parties and local councils. A single TRG has been established to cover all nine subprojects which form part of the broader VMFRP and will be used for the EES process to facilitate the provision of advice from relevant agencies to DELWP and the proponent on:

- applicable policies, strategies and statutory provisions;
- the scoping requirements for the EES;
- the design and adequacy of technical studies for the EES;
- the proponent's public information and stakeholder consultation program for the EES;
- responses to issues arising from the EES investigations;
- the technical adequacy and completeness of draft EES documentation; and
- coordination of statutory processes.

^{3.} For critical components of the EES studies, peer review by an external, independent expert (or panel of experts) may be appropriate.



^{2.} Further information on the EES process can be found at planning.vic.gov.au/environment-assessment/what-is-the-ees-process-invictoria.

Consultation plan

The proponent is responsible for informing and engaging the public and stakeholders to identify and respond to their issues and keep them informed of the EES studies. Stakeholders include potentially affected parties, interested community organisations and government bodies. Under its consultation plan the proponent informs the public and stakeholders about the EES investigations and provides opportunities for input and engagement during the EES investigations. The consultation plan is reviewed and amended in consultation with DELWP and the TRG before it is published on the planning website.⁴ The final consultation plan will:

- identify stakeholders;
- characterise public and stakeholders' interests, concerns and consultation needs, local knowledge and inputs;
- describe consultation methods and schedule; and
- outline how public and stakeholder inputs will be recorded, considered and/or addressed in the preparation of the EES.

Statutory approvals and the EES process

The projects will require a range of approvals under Victorian legislation if they are to proceed. DELWP coordinates the EES process as closely as practicable with the approvals procedures, consultation and public notice requirements.

The key approvals required under Victorian legislation are planning approval via a planning scheme amendment under the *Planning and Environment Act 1987*; works on waterways permits under the *Water Act 1989*; permit to take, keep or move protected flora and fauna (including fish) under the *Flora and Fauna Guarantee Act 1988*; work plans approved under the *Mineral Resources (Sustainable Development) Act 1990;* and an approved cultural heritage management plan (CHMP) under the *Aboriginal Heritage Act 2006* for each project. Other approvals may be required and will be determined throughout the course of the EES.

Planning approvals under the New South Wales *Environmental Planning and Assessment Act* 1979 may also be required.

2.3 Accreditation of the EES process under the EPBC Act

The projects were referred to the Commonwealth under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). A delegate for the Commonwealth Minister for the Environment determined on 7 October 2020 (Lindsay Island) and 24 September 2020 (Wallpolla Island) that the projects are controlled actions (EPBC 2020/8765 and EPBC 2020/8750, respectively), as they are each likely to have a significant impact⁵ on matters of national environmental significance (MNES). The following are the relevant protected matters (controlling provisions) under Part 3 of the EPBC Act:

- listed threatened species and communities (section 18 and 18A); and
- Ramsar wetlands (sections 16 and 17B) for Lindsay Island only.

The Commonwealth delegate determined that the assessment for the controlled actions will be the EES (an accredited assessment process). The Commonwealth Minister or delegate will decide whether the projects are approved, approved with conditions or refused under the EPBC Act, after completion of the accredited EES, when they consider the Minister for Planning's assessment of both projects under the Environment Effects Act.

^{5.} Note that 'relevant impacts' defined in section 82 of the EPBC Act correspond to what are generally termed 'effects' in the EES process.



^{4.} https://www.planning.vic.gov.au/environment-assessment/browse-projects/projects/lindsay-island-floodplain-restoration-project-and-wallpolla-island-floodplain-restoration-project

3. Matters to be addressed in the EES

3.1 General approach

Preparation of the EES should be consistent with the principles of a systems approach and a risk-based approach to the identification of issues for assessment. The EES needs to put forward a sound rationale for the level of assessment and analysis undertaken for any environmental effect or combination of environmental effects⁶ arising from all components and stages of the project. The EES needs to provide an analysis of the significance of the potential effects of the project, with consideration of:

- the potential effects on individual environmental assets magnitude, extent and duration of change in the values of each asset;
- the likelihood of adverse effects, including those caused indirectly as a result of proposed activities, and associated uncertainty of available predictions or estimates;
- proposed avoidance or mitigation measures to reduce predicted effects;
- likely residual effects and their significance, including significant residual impacts on MNES, that are likely to occur assuming the proposed measures to avoid and mitigate environmental effects are implemented; and
- proposed approach to managing and monitoring environmental performance and contingency planning.

3.2 Content and style

Together with the Minister's reasons for decision, the published procedures and requirements and the Ministerial Guidelines, the content of the EES and related investigations is to be guided by these scoping requirements. To facilitate decisions on required approvals, the EES should address statutory requirements associated with approvals that will be informed by the Minister's assessment, including decision-making under the EPBC Act, the Planning and Environment Act and other applicable legislation. The EES should also address any other significant issues that emerge during the investigations. Ultimately, it is the proponent's responsibility to ensure that adequate studies are undertaken and reported to support the assessment of environmental effects.

The EES should provide a clear, objective and well-integrated analysis of the potential effects of the proposed projects, including proposed avoidance, mitigation and management measures. Overall, the main report should include:

- an executive summary of the potential environmental effects of the projects, including potential effects on identified MNES;
- a description of the projects, including their objectives, rationale, key elements, associated requirements for new infrastructure, resource use and use of existing infrastructure;
- a description of the approvals required for the projects to proceed, and their relationship to relevant laws, policies, strategies, guidelines and standards;
- a description of feasible alternatives capable of substantially meeting the project's objectives that may also offer environmental or other benefits (as well as the basis for the choice where a preferred alternative is nominated);
- description of the scope, timing and method for studies or surveys used to provide information on the values of the project areas. This needs to be identified in consultation with the Technical Reference Group. Surveys should be undertaken by suitably qualified persons and adhere to Commonwealth and/or DELWP survey guidelines where relevant. Records and other data from local sources should also be gathered and considered as appropriate;
- descriptions of the existing environment, where this is relevant to the assessment of potential effects;
- appropriately detailed assessments⁷ of potential effects of the projects (and feasible alternatives) on environmental assets and values, relative to the "no project" scenario, together with an estimation of likelihood and degree of uncertainty associated with predictions;

^{7.} Assessments of assets, values and potential effects must be adequately timed to ensure they are accurately representative of seasonal weather patterns of the area.



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^{6.} Effects include direct, indirect, combined, facilitated, consequential, short and long-term, beneficial and adverse effects.

- clear, active measures for avoiding, minimising, managing and monitoring effects, including a statement of commitment to implement these measures;
- predictions of residual effects of the projects assuming implementation of proposed environmental management measures;
- any proposed offset measures where avoidance and other mitigation measures will not adequately address effects on environmental values, including the identified MNES;
- assessment of cumulative impacts with other existing and proposed developments in the region (including other VMFRP projects);
- documentation of the process and results of the consultation undertaken by the proponent during the
 preparation of the EES, including the issues raised by stakeholders or the public and the proponent's
 responses to these issues, in the context of the EES studies and the associated consideration of
 mitigation measures;
- evaluation of the implications for the projects and feasible alternatives from the implementation of legislation and policy;
- evaluation against the principles and objectives of ecologically sustainable development; and
- conclusions on the significance of impacts on local, regional, state and federal matters.

The EES should also include an outline of a program for community consultation, stakeholder engagement and communications proposed for implementation during the construction and operation of the project, including opportunities for local stakeholders to engage with the proponent to seek responses to issues that might arise during project implementation.

The proponent may choose to prepare a website with interactive functionality to provide an alternative form of access to EES information, which may complement the conventional EES chapters and technical documents. Such an approach should be discussed with DELWP Impact Assessment Unit and should be integrated with the preparation of the EES package, including review by the TRG.

The proponent must also prepare a concise, graphical-based non-technical summary document (hard copy A4, no more than 25 pages) for free distribution to interested parties. The EES summary document should include details of the EES exhibition, public submission process and availability of the EES documentation.

3.3 Project description

The EES is to describe the projects in sufficient detail both to allow an understanding of all components, processes and development stages, and to enable assessment of their likely potential environmental effects. The project description should cover the following:

- Contextual information on the projects, including their objectives and rationale, their relationship to statutory policies, plans and strategies, including the basis for selecting the proposed project locations and implications of the projects not proceeding.
 - The project areas and vicinity, supported by plans and maps that show:
 - the location of relevant sensitive receptors;
 - the extent of Crown and private land, existing land uses (including track networks and campgrounds, etc) and waterways;
 - the general layout of the proposed infrastructure, areas of disturbance, including access tracks, containment banks, laydown areas and borrow pits, proposed exclusion and buffer zones;
 - o existing inundation areas under current environmental watering programs; and
 - predicted inundation areas under defined operating scenarios.
- Information on the proposed operating scenarios and inundation regime (flood frequency, duration, timing, inundation extent and depth).
- Other necessary works directly associated with the project, such as road upgrades and/or connections, and infrastructure and services relocation, including visitor facilities.
- Details of all the project components at each site, including:
 - location, footprint, layout and access arrangements during site establishment, construction, commissioning and operation (including inundation areas);
 - design, methods, staging and scheduling of the proposed construction works, including timing of construction of project components, and expected timing of rehabilitation of construction areas where temporary disturbance occurs;



- proposed primary transport routes and anticipated number of truck movements, including from borrow pit sites;
- proposed construction techniques, temporary occupation of land, extent of areas to be disturbed during project establishment and construction, including total area expected to be cleared and any particular requirements for floodwater management;
- waste management during construction;
- o electricity requirements and proposed supply infrastructure;
- \circ $\;$ lighting, safety and any security requirements during construction;
- proposed hours of work and workforce requirements (total work force) during construction, commissioning and operation; and
- approach to be taken regarding project rehabilitation of areas temporarily disturbed during construction.

3.4 Project alternatives

The EES needs to document the proponent's identification and assessment of alternatives, including the preferred alternative(s) and design. This will need to encompass an explanation of how and why specific alternatives were selected for detailed evaluation within the EES. The EES needs to document the likely environmental effects of feasible alternatives, particularly where these offer a potential to minimise and/or avoid significant environmental effects whilst meeting the objectives of the project. The assessment of feasible alternatives and their effects is required to include:

- identification of methods and environmental criteria for selection of preferred alternatives;
- assessment and comparison of the technical feasibility and environmental implications of alternative options considered;
- the basis for selecting the proposed project layout and design, particularly where the project footprint is located within areas of high biodiversity and/or conservation value;
- the basis for selecting the proposed inundation regime in the context of balancing trade-offs between conflicting impacts and benefits; and
- description of how information arising during the EES process was used to refine the preferred project layout and other project alternatives.

The implications of the "no project" option also need to be outlined, including in the context of potential climate change scenarios.

3.5 Applicable legislation, policies and strategies

In addition to the Environment Effects Act and the EPBC Act, the EES will need to identify relevant legislation, policies, guidelines and standards, and assess their specific requirements or implications for the project, particularly in relation to required approvals. Particular attention is drawn to the recent changes in the *Environment Protection Act 1970* which are expected come into effect on 1 July 2021 and to the *Flora and Fauna Guarantee Amendment Act 2019* which came into effect on 1 June 2020⁸, and any subsequent updates to subordinate legislation. Applicable legislation, policies, guidelines and standards from NSW will also be considered in addition to those of Victoria.

The proponent will also need to identify and address other relevant policies, strategies, subordinate legislation and related management or planning processes that may be relevant to the assessment of the project. These include but are not limited to the Victorian guidelines for vegetation removal⁹, EPBC Act policy statements, conservation advices, threat abatement plans and recovery plans for nationally listed threatened species and communities and nationally listed migratory species.

3.6 Ecological benefits and objectives

The EES must include a description of the ecological objectives of the project and assess, wherever possible, the expected benefits against potential impacts, specifying the level of certainty for each. This also needs to include measurable indicators for monitoring and thresholds for further intervention/mitigation and



⁸ Including consideration of recently proposed changes to listings – see: <u>https://www.environment.vic.gov.au/conserving-threatened-species/conservation-status-assessment-project</u> (applies to all mentions of FFG Act in this document)

⁹ Including the DELWP Procedure for the removal, destruction or lopping of native vegetation on Crown land (2018)

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adaptive management actions. The assessment of ecological benefits needs to encompass assessments of the predicted benefits for all relevant MNES (including Ramsar listed sites), individual threatened species and ecological communities (both Commonwealth and State) potentially impacted by each project.

3.7 Evaluation objectives

Evaluation objectives are provided in Section 4 for each of the topics to be addressed in the EES. The draft evaluation objectives identify desired outcomes in the context of key legislative and statutory policies, as well as the principles and objectives of ecologically sustainable development and environment protection, including net community benefit. In accordance with the Ministerial Guidelines, they provide a framework to guide an integrated assessment of environmental effects and for evaluating the overall implications of the project.

3.8 Environmental management framework

Inadequate environmental management of the projects during project construction and operation will not realise the necessary environmental outcomes, statutory requirements or stakeholder confidence. Hence, the proponent will need to provide an environmental management framework (EMF) for the projects within the EES. The EMF will articulate clear accountabilities for managing and monitoring environmental effects and risks associated with construction, commissioning and operation phases of the project.

The EMF is required to describe the baseline environmental conditions to be used to monitor and evaluate the efficacy of applied environmental management and contingency measures, as well as the residual environmental effects of the projects. The framework needs to include the following.

- The context of required approvals and consents, including any anticipated requirements for related environmental management plans, whether for project phases or elements.
- Any existing or proposed environmental management system to be adopted.
- Proposed organisational responsibilities and accountabilities for environmental management during construction, commissioning and operation.
- A register of environmental risks associated with each phase of the projects which is to be maintained during project implementation (can be provided as an attachment to the EES).
- The environmental management measures proposed in the EES to address specific issues, including commitments to improve baseline environmental values, mitigate adverse effects and enhance environmental outcomes.
- Thresholds for action, location and timing for implementation of mitigation measures (provided within the EMF or as an attachment to the EES).
- Proposed arrangements for management of environmental water allocations and prioritisation for allocation of environmental water across the projects in consideration of the wider VMFRP and existing environmental watering programs.
- Arrangements for management of, and access to, baseline and monitoring data.
- A framework for management of any environmental incidents and emergencies.
- A proposed monitoring program including monitoring objectives, indicators and requirements (e.g. parameters, locations, frequency and auditing). Justification needs to be provided for any aspects where monitoring is not proposed.
 - The EMF should consider the need for managing (at least):
 - ecosystem/ecological functions;
 - biodiversity (including MNES) values;
 - o noise, vibration, and dust emissions to air;
 - o public health and safety;
 - o erosion and sediment control;
 - water quality and water table levels, including for all potentially affected wetlands;
 - groundwater and surface water functions (including all potentially affected wetlands), including behaviour and quality, stormwater runoff, salinity, and flood risk;
 - upstream and downstream surface water and groundwater beneficial uses and sensitive receptors, including wetlands, fauna and native vegetation;
 - solid and liquid waste, including potential acid sulphate soils (PASS);
 - Aboriginal cultural heritage values;
 - o historic heritage values;
 - socioeconomic and land use values;
 - landscape and visual values;



- o traffic and road management measures;
- \circ bushfire risk;
- \circ $\;$ rehabilitation of temporarily disturbed construction areas; and
- o emergency management.

The EMF will outline internal and external auditing and reporting requirements to review and continuously improve the effectiveness of environmental management and to ensure compliance with statutory conditions and that the project is meeting its identified objectives. The EMF will set the scope for the development, implementation, governance and review of environmental management plans for construction, commissioning and operation phases of the project. A change management process is to be included. Similarly, the EMF will outline a program for ongoing community consultation, stakeholder engagement and communications for the project, including opportunities for local stakeholders to engage with the proponent and a process for complaints recording and resolution.



4. Assessment of environmental effects

Preparation of the EES and the necessary investigation of effects should be proportional to the environmental risk, as outlined in the Ministerial Guidelines (p. 14). The Minister's decision requiring an EES (Appendix A) articulates the primary matters/potentially significant effects that need to be examined in the EES. A risk-based approach should be adopted during the EES studies, so that a greater level of effort is directed at investigating and managing those matters that pose relatively higher risk of adverse effects.

The following structure sets out how the EES could document its assessment of effects for each draft evaluation objective.

- 1. **Identify key issues or risks** that the projects pose to the achievement of the draft evaluation objective. In addition to addressing the key issues identified, the proponent should undertake an environmental risk assessment covering all potentially significant risks.
- 2. **Characterise the existing environment** to underpin impact assessments having regard to the level of risk. The environmental risk assessment by the proponent could guide the necessary data acquisition.
- 3. Identify the potential effects of the projects on the existing environment (pre-mitigation).
- 4. **Present design and mitigation measures** that could substantially reduce and/or mitigate the likelihood, extent and/or duration of potential effects. All design and mitigation measures must apply the mitigation hierarchy with justification of why higher order measures cannot be applied.
 - a. Avoidance: measures taken to avoid creating adverse effects on native vegetation and biodiversity values from the outset, such as careful spatial or temporal placement of infrastructure or disturbance.
 - b. Minimisation: measures taken to reduce the duration, intensity and extent of impacts that cannot be completely avoided.
 - c. Rehabilitation/restoration: measures taken to improve degraded or removed ecosystems following exposure to impacts that cannot be completely avoided or minimised.
 - d. Offsets: measures taken to compensate for any residual, adverse impacts after full implementation of the previous three steps of the mitigation hierarchy.
- 5. **Assess the likely residual effects** of the projects on the existing environment and evaluate their significance to illustrate the likely effectiveness of the proposed mitigation measures.
- 6. **Propose performance criteria and management** to evaluate whether the project's effects are maintained within permissible levels and propose contingency approaches if they are not.

Where relevant, assessment of the projects effects needs to be considered for both the construction footprint (including ancillary works such as borrow pits)¹⁰ and the proposed inundation area. The description and assessment of effects must not be confined to the immediate area of the projects but must also consider the potential of the projects to impact on nearby environmental values, including areas downstream. In addition, the cumulative effect of the projects in combination with other existing and planned activities in the broader area/region should be assessed for all significant adverse effects and considered in design of mitigation measures and monitoring programs.



¹⁰ Further reference to construction footprint includes ancillary works such as borrow pits.

4.1 Floodplain restoration

Evaluation objectives

Implement environmental watering of floodplains to enhance ecosystem function, biodiversity (particularly listed threatened species and communities), water quality, and cultural values.

Key issues

- Demonstrating ability to achieve potential benefits for the floodplain ecosystem and biodiversity, especially listed species and ecological communities.
- Demonstrating ability to achieve potential benefits to water quality, hydrology, hydrogeology and beneficial water uses of floodplain environments.
- Potential for other indirect benefits such as benefits to cultural heritage values, tourism, recreational use and visual or landscape benefits.
- Relationships and interdependencies between the various potential benefits of the projects.
- Relationships between potential impacts and benefits, as well as consideration of trade-offs.

Existing environment

- Characterise the ecological, hydrological, cultural and socio-economic settings of the floodplain and their interrelationships.
- Characterise existing land and water uses in the vicinity of the project areas and how these are currently governed and managed.
- Characterise the significance of the conservation values in the project areas at the local, regional, state and national levels, including in the context of future climate change scenarios.

Likely effects

- Identify communities and species (particularly those species listed under the EPBC Act, Flora and Fauna Guarantee Act and/or DELWP advisory lists) expected to benefit from the projects and describe the reasons for the expected improvement.
- Quantify (wherever possible) the size of the area expected to benefit, and detail what vegetation components (e.g. understorey diversity, tree canopy cover) are expected to benefit.
- Detail actions that will improve the ecosystem function and predict improvements to ecosystem function in terms of:
 - o elements or parts of the ecosystem that will be improved;
 - importance of the element(s) to the overall ecosystem function;
 - o longevity of the improvements; and
 - o level of certainty that the actions or improvements will be delivered.
- Assess expected ecological benefits for MNES, specific species and ecological values and how they relate to the predicted adverse effects on those species and biodiversity values. The report needs to examine this for each project and the relevant specific species and ecological communities listed under the EPBC Act, Flora and Fauna Guarantee Act and DELWP advisory list.
- Conduct direct comparison between the potential ecological benefits of the project and identified ecological impacts (see Section 4.1), including for specific species and communities.
- Assess potential benefits to water quality, hydrology, hydrogeology and beneficial water uses of floodplain environments resulting from the project's environmental watering regime, and compare these to the expected adverse impacts on these values (see Section 4.3).
- Assess the potential for indirect benefits to cultural heritage values from floodplain restoration and compare these to the potential adverse impacts (see Section 4.4).
- Evaluate the potential for other indirect benefits to be achieved through delivery of environmental water to the floodplains such as tourism, recreational use and visual or landscape benefits.
- Explain the interdependencies between the various potential benefits of the project, including any trade-offs between impacts and benefits considered in the project design process.
- Present detailed evidence that supports the predicted benefits of the project, with explicit consideration of uncertainties associated with predictions made.



Mitigation measures

- Identify management measures (long and short-term), with proposed governance and funding arrangements, that, in addition to the project design, could assist in maximising potential project benefits of the projects.
- Evaluate the feasibility and limitations of implementing mitigation measures proposed and describe and justify the level of uncertainty associated with whether they are expected to achieve their desired outcomes.

Performance criteria

- Describe and evaluate the approach to monitor impacts and verify benefits, with **specific**, measurable, attainable, relevant, time-based indicators for monitoring and thresholds for action and expected timeframes and oversight for project benefits/improvements to be achieved.
- Describe contingency measures to be implemented in the event of unforeseen adverse residual effects or if risks to achieving project benefits/objectives are identified and require further management.

4.2 Biodiversity and habitats

Evaluation objectives

Avoid, and where avoidance is not possible, minimise potential adverse effects on native vegetation, species of flora and fauna (particularly listed threatened species and their habitat and listed ecological communities), as well as address offset requirements (if required) consistent with state and Commonwealth policies.

Key issues

- Direct loss of native vegetation (including large trees, very large trees and hollow-bearing trees) and any associated listed threatened flora and fauna species and communities known or likely to occur in or adjacent to the project area.
- Direct loss of, or degradation to, habitat for species listed as threatened under the EPBC Act, Flora and Fauna Guarantee Act and/or DELWP advisory lists, including aquatic species.
- Potential for indirect effects on biodiversity values including but not limited to those effects associated with changes in hydrology (including surface water and groundwater changes), proposed inundation regimes, water quality (including toxicants, salinity and blackwater events), erosion/ channel stability, habitat fragmentation, fauna barriers, contaminants and pollutants, noise, light, vibration, environmental weeds, pathogens and pest animals (including, but not limited to declared weeds, pathogens and pest animals under the *Catchment and Land Protection Act 1994*).
- Potential for exacerbation of key threatening processes listed under the FFG Act and EPBC Act.
- Disruption to the movement of fauna between areas of habitat across the broader landscape.
- Disruption to the movement of aquatic fauna in affected waterways from changes to hydrology.
- Potential for disturbance or disruptions to faunal breeding, dispersal, foraging, mate-searching and overwintering habitat.
- Potential for impacts to ecosystem functions (physical, chemical, biological) associated with the wetland and floodplain environments.
- How predicted adverse effects on specific vegetation communities, listed species and biodiversity values relate to the predicted ecological benefits.
- Potential cumulative effects on threatened species and other biodiversity values, with particular consideration of the currently operating, approved or proposed environmental watering projects in the region, and any other approved or planned projects within proximity.
- The need for and availability of suitable offsets in accordance with guidelines for the loss of native vegetation and habitat for threatened species, including species and ecological communities which are listed under the EPBC Act, Flora and Fauna Guarantee Act and/or DELWP advisory lists.

Existing environment

- Describe the conservation areas/reserves in the vicinity of the project, including the conservation and biodiversity values of the Murray-Sunset National Park.
- Describe the biodiversity habitat values (critical components, processes and services) associated with the ecological character of the Riverland Ramsar site and limits of acceptable change.



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- Characterise the type, distribution and condition of native vegetation (including large trees, very large trees and hollow-bearing trees), terrestrial and aquatic habitat and habitat corridors or linkages that could be impacted by the project. This must include the quality and type of habitat impacted and quantification of the total direct and indirect impact areas from the proposed action and must be informed as appropriate by targeted surveys undertaken in accordance with the appropriate Commonwealth and/or DELWP survey guidelines and scientific best practice. Information must include maps indicating the location of native vegetation¹¹, large trees, and distribution of matters of state or national environmental significance and associated habitat.
- Characterise existing base flow, seasonal discharge flows (where relevant) and surface water temperatures in relation to aquatic faunal species requirements.
- Identify the existence or likely presence of species and communities listed under the EPBC Act, Flora and Fauna Guarantee Act and DELWP advisory lists, as well as environmental weeds, pathogens and pest animals.
- Characterise baseline conditions for the species and communities listed under the EPBC Act, Flora and Fauna Guarantee Act and/or DELWP advisory lists. This characterisation is to be supported by seasonal or targeted surveys where necessary.
- Characterise the current groundwater conditions based on data, literature and appropriate surveys (where required), and how groundwater interacts with biodiversity/habitat values, including with groundwater dependent ecosystems.
- Describe, and where possible quantify, current ecosystem functions (physical, chemical, biological) associated with the wetland and floodplain environments.
- Characterise the potentially threatening processes that are likely to be present and exacerbated by the project.
- Describe existing management activities undertaken to manage existing threats to biodiversity values.

Likely effects

- Assess, and where possible quantify, likely adverse direct and indirect effects on ecosystem function, native vegetation (including large trees, very large trees and hollow-bearing trees), ecological communities, groundwater dependent ecosystems, as well as fauna and flora species listed under the EPBC Act, Flora and Fauna Guarantee Act and/or DELWP advisory lists.
- Assess the tolerable water regimes for the vegetation communities present within the inundation areas and the effects of proposed operating regimes on these communities.
- Assess the potential for the projects to impact/alter groundwater dependent ecosystems or for changes to groundwater to impact native vegetation communities for habitat.
- Amongst other species and communities, the assessment needs to consider Silver Perch (*Bidyanus bidyanus*), Murray Cod (*Maccullochella peelii*) and Growling Grass Frog (*Litoria raniformis*) for both the Lindsay Island and Wallpolla Island Projects, and for the Lindsay Island Project the Regent Parrot (eastern) (*Polytelis anthopeplus monarchoides*) and Buloke Woodlands of the Riverina and Murray-Darling Depression Bioregions.
- Assessment of potential effects on species needs to take into account the likelihood of occurrence (habitat presence and condition) and the effectiveness of proposed avoidance and mitigation measures and also needs to consider relevant conservation or listing advices, action statements, recovery plans and threat abatement plans. Where surveys do not identify a listed species, but past records and/or habitat analysis suggest that it may occur locally, justification is to be provided if further investigations or further mitigation measures are not proposed.
- Assess impacts on ecosystem function, habitats and conservation values within Lake Wallawalla, Murray-Sunset National Park as well as other conservation areas/reserves.
- Provide an assessment of residual effects of the projects (assuming proposed mitigation measures have been implemented), including for all protected matters under the EPBC Act impacted by the project.

¹¹ Native vegetation mapping is to be of suitable standard to meet the requirements of the 'Guidelines for the removal, destruction or lopping of native vegetation' (DELWP 2017).



- Identify and assess potential impacts and benefits for wetland habitats and conservation values (including critical components, ecosystems and services) associated with Riverland Ramsar site, in the context of ecological character description and acceptable limits of change.
- Assess likely cumulative effects on biodiversity values that might result from the projects in conjunction with other projects or actions taking place or proposed nearby, as well as with threatening processes in the broader region (e.g. bushfire impacts).

Mitigation measures

- Identify potential and proposed design options and measures that could avoid, minimise, mitigate or manage significant direct and indirect adverse effects on native vegetation (including large trees, very large trees and hollow bearing trees), ecosystem function, threatening processes, stream stability and other biodiversity values including any listed ecological communities or flora and fauna species and their habitat within or adjacent to the project areas.
- Identify hygiene controls for vehicle and machinery movement to minimise the spread of pathogens and weeds.
- Evaluate the feasibility and limitations of implementing mitigation measures proposed and describe and justify the level of uncertainty associated with whether they are expected to achieve their desired outcomes.

Performance criteria

- Describe and evaluate the approach to monitor impacts and verify benefits, with specific, measurable, attainable, relevant, time-based indicators for monitoring and thresholds for action and expected timeframes and oversight for ecological benefits/improvements to be achieved, including for specific species and ecological communities. For any fauna surrogates proposed for measuring abundance/population health, ensure they provide suitable representation of the species to which the target relates.
- Describe contingency measures to be implemented in the event of adverse residual effects on flora, fauna or community values (including for the Ramsar listed wetlands) or if risks to achieving project benefits/objectives are identified and require further management.
- Prepare an application and associated management plan in line with DELWP guideline: *Conservation Works Exemption Application process.*
- Consider the need for biodiversity offsets in relation to state and commonwealth policies. If offsets are required, prepare an offset strategy that sets out and includes evidence of the offsets that can be secured or are proposed to satisfy Commonwealth and Victorian offset policy or guideline requirements.
- As part of the offset strategy (if required), describe how the offset/s will be secured, managed and monitored, including thresholds for management actions, responsibility, timing, performance measures and the specific environmental outcomes to be achieved (e.g. as part of offset management plans to be prepared).
- Proposed EPBC Act offsets (if required) must meet the requirements of the EPBC Act Environmental Offsets Policy (October 2012).¹²

4.3 Water, catchment values and hydrology

Evaluation objective

Avoid and, where avoidance is not possible, minimise adverse effects on water quality, hydrology, hydrogeology and beneficial water uses (including for Ramsar listed wetlands).

Key issues

- Potential adverse effects on the functions, values and beneficial uses of surface water environments, due to interception or diversion of flows or changed water quality or flow regimes.
 - Potential erosion, sedimentation and landform stability effects during construction and operation.
- Potential for adverse impacts on water-related values due to changed salinity and blackwater events.



¹² environment.gov.au/epbc/publications/epbc-act-environmental-offsets-policy

- Potential for adverse impacts on water-related values due to bringing in soils and construction materials, spills or other incidents during construction or operation.
- Potential for adverse effects on nearby and downstream water environments (including listed Ramsar wetlands) due to changed flow regimes, water quality, or waterway conditions during construction and operation, in the context of climate change projections.
- Potential cumulative effects on water and catchment values, with particular consideration of the currently operating, approved or proposed environmental watering projects in the region.

Existing environment

- Describe surface water and groundwater conditions and their beneficial uses that could be affected by changed water quality, or hydrology, due to the project.
- Identify and describe nearby waterways, waterbodies, wetlands and floodplains that could be affected by the projects (e.g. Murray River, anabranches, Lake Wallawalla).
- Describe the ecological character of the Riverland Ramsar site, and related hydrological and environmental values protected under the EPBC Act, including their acceptable limits for change.
- Describe local groundwater conditions, including the beneficial uses and environmental values and identify any groundwater dependent ecosystems that could be affected by the project.
- Characterise the interaction between surface water and groundwater within the project and broader areas.
- Assess the potential occurrence of contaminated soils and groundwater or potential acid sulphate soils within the construction and inundation areas.
- Identify and assess potential climate change scenarios on catchment values and hydrology in light of the project.

Likely effects

- Identify and evaluate effects of the projects and alternatives on groundwater, surface water, waterways, waterbodies, wetlands and floodplains near the project works, including potential effects on beneficial water uses downstream.
- Evaluate the likely extent, magnitude and duration of changes to water quality, water level, temperature, inundation areas or flow paths during construction and operation, considering appropriate climate change scenarios and possible cumulative effects resulting in combination with other existing or proposed projects or actions.
- The assessment should include separate consideration of the potential to impact on water, catchment values and hydrology in NSW including the potential to inundate some lower-lying billabongs and creeks on the NSW side of the Murray River.
- Assess the potential for impacts of the construction and operation of the project on the Riverland Ramsar site, particularly potential substantial and/or measurable change to the hydrological regime, in the context of ecological character description and acceptable limits for change.
- Assess potential erosion, sedimentation and landform stability effects of the project.
- Assess the potential for environmental effects of changes in salinity or blackwater events.
- Assess the potential for environmental effects resulting from the generation, storage, treatment, transport and disposal of solid and liquid wastes, including soil, from project construction.

Mitigation measures

- Identify and evaluate design or operational refinements to avoid or minimise adverse effects on water and catchment environments.
- Describe response measures for environmental incidents.
- Describe available options for treatment or disposal of the various categories of solid and liquid wastes generated by the project.
- Evaluate the feasibility and limitations of implementing mitigation measures proposed and describe and justify the level of uncertainty associated with whether they are expected to achieve their desired outcomes.

Performance criteria

• Describe monitoring programs and appropriate monitoring activities with specific, measurable, attainable, relevant, time-based indicators for monitoring and thresholds for action to be



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• Describe possible contingency actions to respond to adverse effects identified through the monitoring program as well as for cases where risks to achieving project benefits/objectives are identified.

4.4 Cultural heritage

Evaluation objective

Avoid, or minimise where avoidance is not possible, adverse effects on Aboriginal and historic cultural heritage values.

Key issues

- Destruction or disturbance of sites or places of Aboriginal cultural heritage, including those within the inundation areas.
- Potential direct or indirect impacts on Aboriginal ancestral remains within the project areas (including inundation areas).
- Potential for indirect impacts on sites or places of Aboriginal significance close to the project areas.
- Potential impacts on intangible Aboriginal cultural heritage values associated with the project areas and surrounds.
- Potential for direct or indirect impacts to sites or places of historical cultural heritage significance, including those within the inundation area.

Existing environment

- Review and assess previous studies, registers, landform and land use history to identify areas of known Aboriginal cultural heritage and prepare predictive models of areas with potential to contain Aboriginal cultural heritage.
- Review and assess records of reported Aboriginal ancestral remains within the project areas and inundation areas.
- Review land use history, previous studies and registers to identify areas of known historical cultural heritage values and assess the potential for the projects to contain unregistered historical cultural heritage sites.
- Describe the extent, nature and significance of any Aboriginal cultural heritage sites or areas of sensitivity potentially impacted by the project areas (including associated infrastructure or ancillary works and inundation areas) through consultation and investigations to the satisfaction of the relevant Registered Aboriginal Parties and First Peoples – State Relations¹³, ensuring adequate field assessments are conducted to verify the findings of any desktop studies.
- Using Heritage Victoria's Guidelines for Conducting Archaeological Surveys (2020), identify and document any known and previously unidentified places and sites of historical cultural heritage significance within the project areas and their vicinity, including any necessary field investigations to supplement past studies.
- Identify intangible Aboriginal cultural heritage values associated with the project areas.

Likely effects

- Assess the potential direct and indirect effects of the projects on Aboriginal cultural heritage values, within the project area (including inundation areas), and whether they can be avoided.
- Assess the potential direct and indirect effects of the projects on sites and places of historical cultural heritage significance.
- Consider the potential for indirect impacts to cultural heritage sites located in proximity to the construction footprints and inundation areas which may result from increased public access and visitation to project areas.
- Assess the potential direct or indirect effects on any intangible Aboriginal cultural heritage values associated with the project areas.

¹³ Note: Aboriginal Victoria has recently changed its name to 'First Peoples – State Relations'.



Mitigation measures

- Describe and evaluate potential and proposed design, construction and operation mitigation methods to avoid adverse effects on Aboriginal and historical cultural heritage, and where avoidance is not possible, to minimise adverse effects.
- Develop CHMPs to the satisfaction of the First People of the Millewa-Mallee Aboriginal Corporation (for Wallpolla Island) and First Peoples State Relations (for Lindsay Island).
- Develop a chance finds procedure.
- Develop archaeological management plans (where required) to manage historical heritage investigation/excavation etc.

Performance criteria

- Outline how implementation of proposed commitments to mitigate and manage residual effects on sites and places of historical heritage significance will be monitored, including site investigation and recording procedures.
- Outline how compliance with conditions of any required statutory approvals (i.e. consents/permits/ CHMPs) will be managed and monitored.
- Outline and evaluate the need for additional management and/or monitoring measures, further to those presented in the draft CHMPs, to manage risks of effects on sites and places of Aboriginal cultural heritage significance, as part of the EMF.

4.5 Social, economic, amenity, land/waterway use and infrastructure

Evaluation objective

Minimise potential adverse social, economic, amenity and land/waterway use effects, including impacts on existing infrastructure and open space.

Key issues

- Potential for project works and operations to affect existing or approved land and waterway uses, including agricultural, private and recreational.
- Effects on recreational and commercial (e.g. apiary, licensed tour operators) activities in the Murray-Sunset National Park and River Murray Reserve.
- Positive and adverse socio-economic effects, at local and regional scales, potentially generated by the project, including potential for increased employment, traffic, tourism and visitation as well as pressures on existing housing and community infrastructure.
- Potential for project construction works and operations to affect landscape amenity values and experiences of park settings and surroundings landscapes.

Existing environment

- Describe the socio-economic environment near the proposed borrow pits and associated transport routes.
- Describe existing and reasonably foreseeable land uses within and adjacent to the proposed project areas, including recreational and commercial activities.
- Identify any dwellings and any other potentially sensitive receptors (e.g. recreational areas, campsites etc.) that could be affected by the project's potential effects on air quality, noise and/or vibration levels (including along key transport routes).
- Identify existing assets/infrastructure in park/reserve settings.
- Identify any existing holders of licences or registrations issued under the *Water Act 1989,* irrigation users and infrastructure potentially affected by the projects.
- Describe proposed transport routes during construction, commissioning and operations (for employees or construction equipment), including from ancillary locations (e.g. borrow pits). This should include description of the capacity for existing roads to accommodate project traffic.
- Identify existing and reasonably foreseeable land uses occupying land to be traversed by, adjacent to, or otherwise affected by impacts from the project.
- Identify any existing management plans or strategic plans specifying or encouraging land use outcomes for land to be occupied by the project.
- Identify visual and landscape values near the project, including public and private vantage points from which elements of the projects may be visible.



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Likely effects

- Assess the expected positive and adverse socio-economic and amenity effects, at the local and regional scales, potentially generated by the project, including impacts on employment, impacts of increased tourism/visitation and impacts on community infrastructure (including roads).
- Describe the likely extent and duration of any temporary disruption to existing land and waterway uses (including commercial and recreational use), land access (including access for emergency services) and infrastructure, including park facilities and visitor assets, arising from project construction.
- Assess the potential for the projects to result in increased traffic and visitation.
- Assess potential visual or landscape impacts and benefits of the project.
- Assess potential safety hazards to the public arising from project construction and operation (including safety risks associated with changed flooding regimes).
- Describe the bushfire hazard for the immediate project area and broader landscape conditions and undertake appropriate risk assessment that considers the potential for increased risk of bushfire to people, property and community infrastructure due to the projects.
- Assess the potential for cumulative impacts on social, amenity and land use values in conjunction with any other existing or planned projects and land uses including the other VMFRP projects.

Mitigation measures

- Identify potential and proposed design responses and/or other mitigation measures to avoid, reduce and/or manage any significant effects for sensitive receptors during project construction and operation arising from air pollution, noise, vibration, traffic and lighting, in the context of applicable policy and standards.
- Identify options for mitigating impacts from project construction, commissioning or operation on any potentially affected private land, businesses, community and park facilities.
- Describe and evaluate the proposed traffic management and safety principles to address changed traffic conditions during construction, commissioning and operation of the project.
- Outline any required transport infrastructure works or upgrades required to address adverse impacts of the projects' construction, commissioning and operation, including impacts on accessibility (e.g. access road construction and upgrades).
- Identify measures for mitigating or managing visual or landscape impacts of the project, in line with amenity guidelines from landowner, where relevant.

Performance criteria

- Outline measures to monitor the success of commitments to mitigate or manage effects on social, economic, amenity and land/waterway use values and infrastructure during all phases of the project.
- Describe the approach to monitor effects and develop contingency measures to be implemented in the event of adverse residual effects on social, economic, amenity and land/waterway use values and infrastructure requiring further management.



Appendix A: Procedures and requirements

Procedures and requirements under section 8B(5) of the *Environment Effects Act* 1978 (approved by Minister for Planning on 6 December 2020).

- i. A single EES is to document the investigations and integrated assessment of the potential environmental effects of the proposed projects. The investigations and assessments are to include feasible project alternatives and design refinements (e.g. alternative project layouts, siting of infrastructure, management measures, project staging and timing and/or extent of inundation events) to avoid, minimise, and manage effects, particularly for:
 - adverse effects on biodiversity and ecological values within and near the project area, including effects of exacerbated threatening processes, on native vegetation, listed threatened ecological communities and protected species;
 - b. intended ecological benefits and how they relate to the predicted adverse effects on specific biodiversity values;
 - c. effects on Aboriginal and historic cultural heritage values;
 - d. potential effects on water environments and related beneficial uses;
 - e. effects on groundwater that may results in adverse changes to groundwater dependent ecosystems;
 - f. effects on the socio-economic environment, including recreational and commercial (apiary) activities in the Murray-Sunset National Park and River Murray Reserve;
 - g. effects on existing landscape values; and
 - h. potential cumulative effects, including for threatened flora and fauna, hydrology and groundwater values, with particular regard to currently operating, approved and proposed environmental watering projects in the region.
- ii. The matters to be investigated and documented in the EES will be set out more fully in scoping requirements prepared by the Department of Environment, Land, Water and Planning (DELWP). Draft scoping requirements will be exhibited for 15 business days for public comment, before final scoping requirements are issued by the Minister for Planning.
- iii. The proponent is to prepare and submit to DELWP a draft EES study program to inform the preparation of scoping requirements.
- iv. The level of detail of investigation for the EES studies should be consistent with the scoping requirements and be adequate to inform an assessment of the potential environmental effects (and their acceptability) of the project and any relevant alternatives, in the context of the Ministerial Guidelines.
- v. DELWP will convene an inter-agency technical reference group (TRG) to advise DELWP and the proponent, as appropriate, during the preparation of the EES on the scoping requirements, the design and adequacy of the EES studies, and coordination with statutory approval processes.
- vi. The proponent is to prepare and submit to DELWP its proposed EES consultation plan for consulting the public and engaging with stakeholders during the preparation of the EES. Once completed to the satisfaction of DELWP, the EES consultation plan is to be implemented (and updated as appropriate) by the proponent, having regard to advice from DELWP and the TRG.
- vii. The proponent is also to prepare and submit to DELWP its proposed schedule for the completion of studies, preparation and exhibition of the EES, following confirmation of the draft scoping requirements. This is to enable effective management of the EES process on an agreed alignment of the proponent's and DELWP's schedules, including for TRG review of technical studies for the EES and the main draft EES documentation.
- viii. The proponent is to apply appropriate peer review and quality management procedures to enable the completion of EES studies to a satisfactory standard.
- ix. The EES is to be exhibited for a period of not less than 30 business days for public comment, unless the exhibition period spans the Christmas–New Year period, in which case 40 business days will apply.
- x. An inquiry will be appointed under the *Environment Effects Act 1978* to consider environmental effects of the project.

