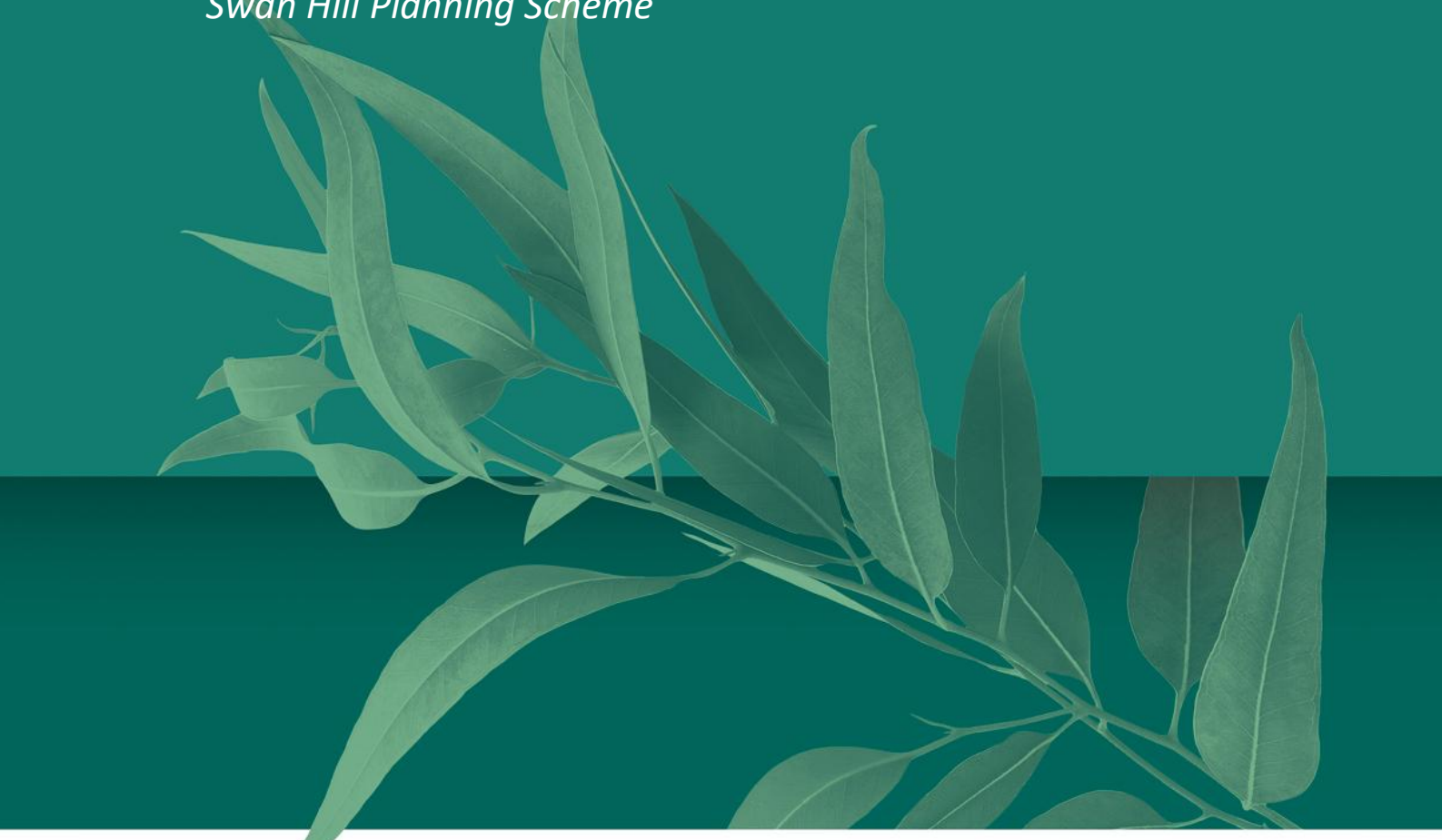
VICTORIAN MURRAY FLOODPLAIN RESTORATION PROJECT
HEALTHY LANDSCAPES, STRONG COMMUNITIES

# Environmental Management Framework

Hattah Lakes North Floodplain Restoration Project
Belsar-Yungera Floodplain Restoration Project

*GC202 Incorporated Document - Condition 4.5*
*Mildura Planning Scheme*
*Swan Hill Planning Scheme*



Australian Government
VICTORIA State Government
LOWER MURRAY WATER
Goulburn-Murray WATER
mallee catchment management authority
North Central CMA
Parks VICTORIA

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# Quality Information

| Version | Date | Prepared by | Approved for submission |
|---|---|---|---|
| 1 | 11 June 2026 | J David | A Sutton |
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# 1 Introduction

The purpose of this Environmental Management Framework (EMF or the Framework) is to provide a transparent framework to manage the environmental effects of the Belsar-Yungera and Hattah Lakes North projects (the projects) in order to meet statutory requirements, realise project objectives and sustain stakeholder confidence. It contains Environmental Delivery Standards (EDS) which set out the environmental management measures and standards that will apply to enable the benefits of the projects to be achieved whilst managing environmental risk and avoiding, minimising and appropriately managing potential impacts.

Consistent with the Minister's expectations[1], this final EMF is based on Chapter 18 of the exhibited Environmental Effects Statements (EES) for the projects, and has been updated to incorporate both the Minister's recommendations (as applicable) and the specific requirements of the GC202 Incorporated Document within the Mildura and Swan Hill planning schemes. This has occurred in consultation with the Department of Energy, Environment and Climate Action (DEECA).

This Framework outlines clear accountabilities for the delivery and operation of the Belsar-Yungera and Hattah Lakes North projects in accordance with the project approvals, all relevant environmental laws, approval conditions, and environmental management plans and procedures. This Framework ensures that the environmental risks and potential impacts of the projects would be appropriately managed, and that the benefits would be realised for the Belsar-Yungera and Hattah Lakes North projects. It has been informed by an environmental risk assessment undertaken in accordance with the risk management standard ISO31000:2018, as well as an assessment of effects included in the specialist assessments.

This Framework specifies the environmental management process which that would be implemented during the design, construction, commissioning and operation of the Belsar-Yungera and Hattah Lakes North projects. It also outlines the existing management systems and procedures, as well as project- specific documentation, such as the Operation Environmental Management Plan, Environmental Water Management Plan and Operating Plan that would be implemented as part of the projects. In addition, the Framework also presents the requirements for operational performance management and monitoring, evaluation and reporting for both ecological outcomes and cultural and socio-economic components, as well as compliance auditing.

Similarly, this Framework specifies the environmental management process to be adopted during the construction and commissioning of the Belsar-Yungera and Hattah Lakes North projects and outlines the processes to be followed in the preparation, review, approval and implementation of environmental management plans and procedures, including the Construction Environmental Management Plan and the Operation Environmental Management Plan. It also provides for the regular review and updating of environmental management plans, strategies and sub-plans, as well as independent monitoring, auditing and reporting of compliance during construction and operation.

***Environmental Delivery Standards*** *set out the environmental management measures and standards that will apply to enable the benefits of the projects to be achieved whilst avoiding, minimising and appropriately managing potential impacts. This includes mitigation measures, consultation requirements and performance management to minimise potential impacts and risk of harm to human health and the environment, so far as reasonably practicable having regard to delivery of project benefits.*

[1] Page 25, *Belsar-Yungera and Hattah Lakes North Floodplain Restoration Projects, Ministers Assessment under Environment Effects Act 1978* (available online at www.planning.vic.gov.au)

# 2 Incorporated Document

Delivery of the projects will be facilitated by the Incorporated Document inserted into the Mildura and Swan Hill Planning Schemes by Planning Scheme Amendment GC202, gazetted on 5 December 2024. Condition 4.5 of the Incorporated Document requires the preparation of an EMF for the projects to the satisfaction of the Minister of Planning prior to the commencement of development (excluding preparatory buildings and works under Condition 4.13 of the Incorporated Document).

This EMF responds to the relevant requirements of Condition 4.5.2 the Incorporated Document which requires that the EMF must:

**Table 1: Incorporated Document requirements for this EMF**

| Requirement | | Page/Section within this EMF |
|---|---|---|
| **Condition 4.5.1** | | |
| Before the development starts (excluding preparatory works), an environmental management framework must be approved and endorsed by the Minister for Planning | | n/a |
| **Condition 4.5.2** | | |
| a) | Be prepared to the satisfaction of the Minister for Planning. | n/a |
| b) | Be submitted in electronic form. | n/a |
| c) | Be informed by the findings and conclusions of the environment effects statement prepared for the projects under the Environment Effects Act 1978 and by the Minister's Assessment. | Section 1 |
| d) | Be accompanied by a statement explaining any difference between the environmental management framework and the matters set out in the Minister's Assessment. | n/a |
| e) | Be prepared in consultation with the Department of Energy, Environment and Climate Action. | Sections 1, 10.2, 10.3 |
| f) | Contain a description of the project elements and key construction and operational activities covered by the EMF. | Section 3.2, Appendix A |
| g) | Contain the Environmental Delivery Standards (EDSs) generally in accordance with the Minister's Assessment unless otherwise approved by the Minister for Planning and that are applicable to the design, construction and operation of the projects and address the following areas and any other relevant matters:<br>i. Aboriginal cultural heritage<br>ii. Agriculture<br>iii. Air quality<br>iv. Bushfire<br>v. Contamination<br>vi. Environmental management<br>vii. Geology and soils<br>viii. Groundwater<br>ix. Historical heritage<br>x. Land use planning<br>xi. Landscape and visual<br>xii. Native vegetation<br>xiii. Noise and vibration<br>xiv. Overall biodiversity improvement<br>xv. Social and business | Section 11 |

| | |
|---|---|
| xvi. Surface water<br>xvii. Threatened species and communities and their habitat<br>xviii. Traffic and transport. | |
| h) Set out the process and timing and approval requirements for the development of plans and procedures required by the EMF and the EDSs as relevant to any stage of the Projects including the process for review and amendment of the plans and procedures as relevant. | Sections 7.3, 8.2 ,9 ,11 |
| i) Contain a summary of the consultation that informed the preparation of the EMF and a summary of the proposed ongoing engagement activities with the councils, the community and other stakeholders during construction of the projects and processes for enquiries and complaints management. | Section 10 |
| j) Contain the performance monitoring and reporting processes, including requirements for auditing, to evaluate compliance with and the effectiveness of the EMF and management plans in mitigating and managing environmental risks and impacts during construction of the projects. | Section 7.4 (operation)<br><br>Section 8.3 (construction) |
| **Condition 4.5.3** | |
| The use and development of the project land for the projects must be carried out in accordance with the approved environmental management framework. | n/a |
| **Condition 4.5.4** | |
| The environmental management framework may be amended from time to time, with the written consent of the Minister for Planning. | n/a |
| **Condition 4.5.6** | |
| Any request to amend the environmental management framework must be accompanied by:<br>a) A description of the form and extent of any consultation undertaken with relevant stakeholders concerning the proposed amendment.<br>b) Any written comments received from relevant stakeholders.<br>c) A written response to comments made by relevant stakeholders. | n/a |
| **Condition 4.5.6** | |
| • The current version of the environmental management framework must be available on a<br>• clearly identifiable project or other relevant website from the date of approval and must remain available on such website for at least 10 years after completion of construction. | When approved, refer VMFRP website |

# 3 Governance framework

## 3.1 The Victorian Murray Floodplain Restoration Project

The Belsar-Yungera and Hattah Lakes North projects are two of the eight projects comprising the Victorian Murray Floodplain Restoration Project (VMFRP). The VMFRP is a Victorian Government project being delivered by Lower Murray Water (LMW) in collaboration with organisations that have statutory responsibilities for environmental protection, public land management and waterway management. These organisations are LMW, Goulburn-Murray Water (GMW), Mallee Catchment Management Authority (Mallee CMA), North Central CMA, Parks Victoria and the Department of Energy, Environment and Climate Action Water and Catchments Group (DEECA WCG). Each of these project partners is driven by a common purpose of environmental protection and resilience. Capital costs of the projects are provided by the Commonwealth Government, whilst ongoing operational funding to meet the project objectives would be provided by the Victorian Government. VMFRP is being implemented as part of Victoria's obligations under the Murray-Darling Basin Plan ('the Basin Plan') and would operate in accordance with requirements for environmental watering under the *Water Act 2007* (Cth) and the *Water Act 1989* (Vic).

The VMFRP is funded by the Commonwealth Government's Department of Climate Change, Energy, the Environment and Water (DCCEEW). DEECA WCG is the VMFRP sponsor and, on behalf of the Minister for Water, sets the strategic direction of the VMFRP and oversees the delivery of the VMFRP as part of Victoria's obligations under the Basin Plan.

Traditional Owner groups are fundamental stakeholders for the VMFRP. Their input has been and will continue to be sought, considered and incorporated into the development, implementation and ongoing management of environmental watering programs that may result from the VMFRP.

Private landowners also have an important interface with the VMFRP, and consultation with them will be important for the delivery of environmental water as part of the VMFRP.

In addition, regulatory authorities such as DEECA, DCCEEW, Parks Victoria, Traditional Owner groups and First People – State Relations continue to play a key role having issuing the relevant approvals for the VMFRP through ensuring ongoing compliance with relevant approvals.

## 3.2 The Belsar-Yungera and Hattah Lakes North projects

A description of the physical project elements and key construction and operational activities covered by this EMF are provided for the Belsar-Yungera and Hattah Lakes North projects in Appendix A.

The Belsar-Yungera and Hattah Lakes North projects would be operated by the Mallee CMA as the waterway manager and LMW as the owner of the infrastructure constructed as part of the projects. Mallee CMA and LMW will operate in consultation with the land managers, including Parks Victoria, Traditional Owners and Interested Parties, DEECA and private landowners, to ensure the successful delivery of the Belsar-Yungera and Hattah Lakes North projects. In addition, the Mallee CMA would convene an Operations Group for the Belsar-Yungera and Hattah Lakes North projects consisting of agency representatives from Parks Victoria, LMW, GMW, and Murray-Darling Basin Authority's (MDBA) River Management, who will share information regarding Murray River operations, natural flood events and upstream environmental watering events prior to and during the events.

The Belsar-Yungera and Hattah Lakes North projects would operate in accordance with existing Commonwealth and Victorian statutory requirements for environmental watering and relevant project approvals, as outlined in Section 7 of this EMF. The projects would operate in accordance with the Victorian Government's existing and long-established environmental water management processes and procedures established under the *Water Act 1989* (Vic), as well as site specific plans outlined in this Framework and applicable statutory approval conditions.

Construction of the Belsar-Yungera and Hattah Lakes North projects will occur in accordance with relevant Commonwealth, Victorian and New South Wales statutory requirements, statutory approvals and approval conditions. LMW will be responsible for the construction of the projects and the physical operation of the infrastructure (once constructed) to enable the delivery of environmental water. The Mallee CMA will be responsible for planning and managing environmental watering events and monitoring outcomes in cooperation with LMW and other partner agencies in accordance with the environmental water management processes and procedures.

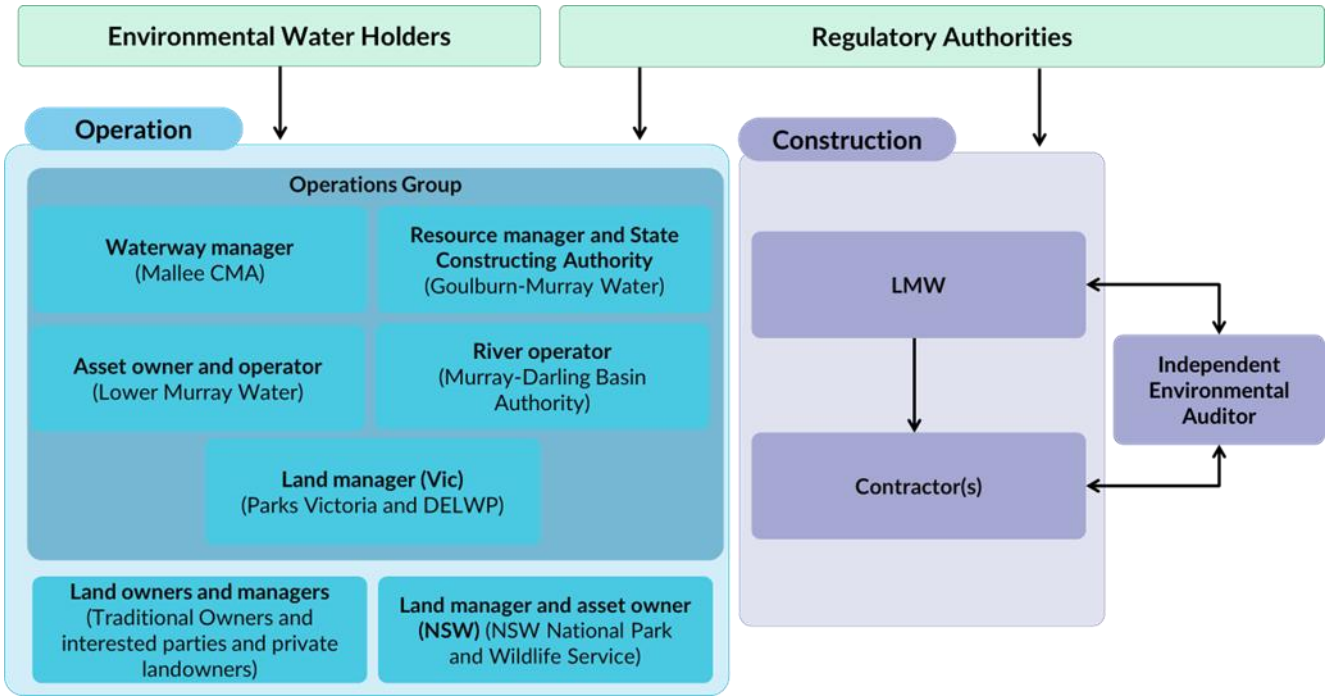
In addition to the legislative framework for managing the Murray-Darling Basin, the *Water Act 2007* (Cth) established:

- The Commonwealth Environmental Water Holder (CEWH) to manage the Commonwealth's environmental water
- The Commonwealth Environmental Water Office (CEWO) who supports the CEWH in decision- making on for the use of Commonwealth environmental water.

The *Water Act 1989* (Vic) established the Victorian Environmental Water Holder (VEWH), a statutory body, that holds water entitlements used for environmental purposes and which is responsible for state-wide planning for the use of Victoria's environmental water. This would include authorising environmental watering operations using proposed VMFRP infrastructure, subject to the actions proposed by Mallee CMA in their Seasonal Watering Proposals. Across the Southern Murray-Darling Basin, the coordination of the delivery of all environmental water is managed by the Southern Connected Basin Environmental Watering Committee (SCBEWC). This advisory body was established under the Murray Darling Basin Ministerial Council, and includes environmental water and river operations representatives from the Commonwealth, New South Wales, South Australian and Victorian governments.

Details on the roles discussed above are displayed in Figure 1 below and the tables contained within Section 3.3.

**Figure 1: Organisational chart for the Belsar-Yungera and Hattah Lakes North projects**




## 3.3 Roles and responsibilities

Key roles and responsibilities in respect of the Belsar-Yungera and Hattah Lakes North projects for ensuring compliance with this Framework and the Environmental Delivery Standards are described in Table 2 (Regulatory authorities), Sections 7.1 and 7.2 (for operation) and Section 8.1 (for construction).

## 3.4 Regulatory authorities

This section identifies those statutory authorities and agencies with a role in granting approval for the development and/or operation of the Belsar-Yungera and Hattah Lakes North projects.

**Table 2: Roles and responsibilities of key regulatory authorities for the Belsar-Yungera and Hattah Lakes North projects**

| Organisation | Responsibility |
|---|---|
| **Commonwealth** | |
| Commonwealth Minister for the Environment | Having granted approvals under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) for the projects as follows:<br>• Belsar-Yungera project (Referral Number EPBC 2020/8744) on 9 February 2024<br>• Hattah Lakes North project (Referral Number EPBC 2020/8632) on 22 February 2024<br>The Commonwealth Minister for the Environment will have oversight of compliance with the relevant approval conditions applicable to the construction and operation of the projects, including approval of the plans required by the conditions. |
| Murray-Darling Basin Authority | Assess a proposal that may affect the flow, use, control or quality of any water in the upper Murray River under Clause 49 of Schedule 1 of the *Water Act 2007* (Cth) for the Belsar-Yungera and Hattah Lakes North projects.<br>Approve plans for proposed works submitted to the MDBA under clause 63 of Schedule 1 of the *Water Act 2007* (Cth). |
| **Victoria** | |
| Minister for Planning (Vic) | Review and approve this EMF for the Belsar-Yungera and Hattah Lakes North projects against the requirements of Conditions 4.5.1 to 4.5.6 of the GC202 Incorporated Document<br>Consider, approve and endorse a development plan in accordance with Clause 4.4.1 and 4.4.2 of the GC202 Incorporated Document.<br>Consider, approve and endorse a bushfire emergency response plan in accordance with Clause 4.10.1 of the GC202 Incorporated Document.<br>Receive three-monthly Construction Environmental Performance Reports as described in Section 8.3.3.<br>Receive annual Operation Environmental Performance Reports as described in Section 7.4.4., except where the Minister agrees that compliance reports are no longer necessary or less frequent reports are required.<br>The Minister for Planning is the responsible authority for the projects on land subject to the SCO2 in the Mildura and Swan Hill Planning Schemes, as such the Minister is responsible for administering and enforcing the controls introduced by planning scheme amendment GC202 through both the construction and operation phases. |
| Minister for Water (Vic) | Issue a licence for works to construct, alter, operate, remove or decommission any works on a waterway under Section 67 of the *Water Act 1989* (Vic) for the Belsar-Yungera and Hattah Lakes North projects.<br>During a watering event, if LMW cannot activate a piece of infrastructure and divert water by means of the VEWH's environmental entitlement, a |

| Organisation | Responsibility |
|---|---|
| | Water-Use Registration issued by the Minister for Water (under Section 64AR of the *Water Act 1989* (Vic)) will be required to authorise the use of water for purposes other than irrigation. |
| Secretary to DEECA (as constituted under Part 2 of the *Conservation, Forests and Lands Act 1987*)<br><br>Note: applies to all references to Secretary to DEECA | Approve the Construction Environmental Management Plan and the Operation Environmental Management Plan in accordance with Clauses 4.5.7 and 4.5.8 of the GC202 Incorporated Document, respectively..<br><br>Receive information regarding native vegetation removal, and consider any assessment of overall improvement for biodiversity application in lieu of native vegetation offsets in accordance with Clause 4.6 of the GC202 Incorporated Document.<br><br>Receive information regarding monitoring in accordance with Clause 4.7 of the GC202 Incorporated Document within the Mildura and Swan Hill planning schemes.<br><br>Consider, approve and endorse a fire access road plan in accordance with Clause 4.10.3 and 4.10.4 of the GC202 Incorporated Document.<br><br>Issue a licence or permit to take protected flora under Section 48 of the *Flora and Fauna Guarantee Act 1988* (Vic).<br><br>Issue a licence or permit to handle fish under Section 53 of the *Flora and Fauna Guarantee Act 1988* (Vic).<br><br>Give written authorisation to take, handle and disturb wildlife that may be at risk of harm during construction works under Section 28A of the *Wildlife Act 1975* (Vic). |
| Regional Director, DEECA Loddon Mallee | Approve the hollow replacement plan required by EDS E8. |
| Secretary to the Department of Premier and Cabinet | Approve and ensure compliance with the Cultural Heritage Management Plan (CHMP) for Hattah Lakes North (CHMP No. 14330) and Belsar-Yungera (CHMP No. 16898) under the *Aboriginal Heritage Act 2006* (Vic). This will be managed via First Peoples – State Relations (within the Department of Premier and Cabinet) because there is no registered Aboriginal party for either project. |
| Minister for Resources | Issue licence or exemption from licence for borrow sites if required under the *Mineral Resources (Sustainable Development) Act 1990*. Earth Resources Regulation may also play a role in ensuring the borrow sites comply with the Earth Resources Regulation Code of Practice for Small Quarries. |
| Parks Victoria | Parks Victoria is the land manager for the Crown land under the *National Parks Act 1975* (Vic) and *Crown Land (Reserves) Act 1978* (Vic), in this case, Hattah-Kulkyne National Park, the Murray River Park and Lake Powell and Carpul Wildlife Reserve where infrastructure will be constructed and operated and the wetlands, waterways and floodplain where the environmental water will be delivered.<br><br>For infrastructure to be constructed, maintained and operated in a National Park, issue consent for such works via the provisions of Section 27 of the *National Parks Act 1975* (Vic). Consent and licence the occupation of public land relating to the construction, operation and |

| Organisation | Responsibility |
|---|---|
| | maintenance of infrastructure at the Belsar-Yungera project site, under the provisions of the *Crown Land (Reserves) Act 1978* (Vic) (Section 17).<br><br>Issue Access Agreements and Permits for on-park activities such as ecological monitoring, pest plant and animal control or (unlicenced) works conducted by other parties on the Parks Victoria estate.<br><br>Prepare and submit Native Title Future Act notification/s under the *Native Title Act 1993* (Cth) to First Nations Legal & Research Services, for activities on Crown land that may affect native title rights and interests, as there is no native title holder for the project areas. |
| Victorian Fisheries Authority | Provide authorisation to create obstructions to fish passage (Section 119) and/or a permit to take fish (Section 49) under the *Fisheries Act 1995* (Vic) for the Belsar-Yungera and Hattah Lakes North projects. |
| Heritage Victoria | Provide consent under Sections 123 and 124 of the *Heritage Act 2017* (Vic) to deface, damage or otherwise interfere with an archaeological site for the Belsar-Yungera and Hattah Lakes North projects, if required. |
| Swan Hill Rural City Council (Belsar-Yungera project)<br><br>Mildura Rural City Council (Hattah Lakes North project) | As coordinating road authority for municipal roads, provide consent to construct works on a road under the *Road Management Act 2004* (Vic). |
| Mallee Catchment Management Authority | Consider, approve and endorse plans and hydraulic assessment regarding works on land subject to a Land Subject to Inundation Overlay, in accordance with Clause 4.9.1 of the GC202 Incorporated Document. |
| Head, Transport for Victoria | Consider, approve and endorse a road access plan, if required, in accordance with Clause 4.8.1 of the GC202 Incorporated Document. |
| **New South Wales** | |
| Minister for Planning and Public Spaces (NSW) | Undertake an assessment and provide consent for the Belsar-Yungera and Hattah Lakes North projects under the Balranald Planning Scheme, pursuant to Part 4 of the *Environmental Planning and Assessment Act 1979* (NSW). Approval of a development consent under the Balranald LEP 2010 may also be required. |
| Minister for Agriculture and Western New South Wales (NSW) | Provide permission for dredging or reclamation under Part 7, Division 3 of the *Fisheries Management Act 1994* (NSW) for the Belsar-Yungera and Hattah Lakes North projects, unless these activities are covered by an exemption, such as for an artificial water body or farm dam (as defined in the Division). |
| Minister for Energy and Environment (NSW) | Issue an Aboriginal Heritage Impact Permit under Part 6, Division 2 of the *National Parks and Wildlife Act 1974* (NSW), if required, for the Belsar-Yungera and Hattah Lakes North projects. |

# 4 Statutory approvals and consents

LMW was responsible for preparing the EES required for the Belsar-Yungera and Hattah Lakes North projects under the *Environment Effects Act 1978* (Vic). Table 3 provides an overview of the key statutory approvals and consents required for the Belsar-Yungera and Hattah Lakes North projects. Further information on all approvals and consents required for the Belsar-Yungera and Hattah Lakes North projects can be found in EES Attachment III Legislation and policy.

**Table 3: Statutory approvals and consents required for the Belsar-Yungera and Hattah Lakes North projects**

| Legislation | Approval Authority | Statutory approval/consent | Phase |
|---|---|---|---|
| **Commonwealth** | | | |
| *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) | Commonwealth Minister for the Environment | Approval for the Belsar-Yungera (Referral Number EPBC 2020/8744) and Hattah Lakes North (Referral Number EPBC 2020/8632) projects for potential impacts on Matters of National Environmental Significance. | Construction and Operation |
| *Water Act 2007* (Cth) | MDBA | Assessment of a proposal that may affect the flow, use, control or quality of any water in the upper Murray River and approval of a proposal, including plans, to carry out works not provided for by the Murray Darling Basin Agreement under Clauses 49 and 63 of Schedule 1 respectively. | Construction and Operation |
| **Victoria** | | | |
| *Planning and Environment Act 1987* (Vic) | Minister for Planning | Approval of a Planning Scheme Amendment to the Swan Hill Planning Scheme (Belsar-Yungera) and the Mildura Planning Scheme (Hattah Lakes North).<br><br>Approval of EMF and EDSs. under the Incorporated Document | Construction and Operation |
| *Aboriginal Heritage Act 2006* (Vic) | Secretary to Department of Premier and Cabinet | Evaluation and approval of two CHMPs:<br><br>• Belsar-Yungera CHMP No. 16898<br>• Hattah Lakes North CHMP No. 14330 | Construction |

| Legislation | Approval Authority | Statutory approval/consent | Phase |
|---|---|---|---|
| *Flora and Fauna Guarantee Act 1988* (Vic) (FFG Act) | Secretary to DEECA | Approve a permit to take protected flora on Crown land under Section 48.<br><br>Approve a permit to handle fish under Section 53. | Construction |
| *National Parks Act 1975* (Vic) | Parks Victoria | Consent to perform and exercise functions and powers in Hattah-Kulkyne National Park, a designated National Park, under Section 27. | Construction and Operation |
| *Crown Land (Reserves) Act 1978* (Vic) | Parks Victoria | Approval of a licence or lease to occupy land within the Lake Powell and Carpul Wildlife Reserve under Section 17. | Construction and Operation |
| *Water Act 1989* (Vic) | Minister for Water (Vic) | Approval of a licence:<br><br>To construct, alter, operate, remove or decommission any works on a waterway under Section 67. | Construction and Operation |
| *Wildlife Act 1975* (Vic) | Secretary to DEECA | Issue a permit (Management Authorisation) under Section 28A to salvage, handle and disturb fauna that may be at risk of harm during construction. | Construction |
| *Heritage Act 2017* (Vic) | Heritage Victoria | Consent to deface, damage or otherwise interfere with an archaeological site whether or not it is included on the Victorian Heritage Inventory under Sections 123 and 124, if required. | Construction |
| *Road Management Act 2004* (Vic) | Swan Hill Rural City Council (Belsar-Yungera project)<br><br>Mildura Rural City Council (Hattah Lakes North project) | Provide consent for use or development of land within a declared road. | Construction |
| **New South Wales** | | | |
| *Environmental Planning and Assessment Act 1979* (NSW) | Minister for Planning and Public Spaces | Approval under the Balranald Planning Scheme, pursuant to Part 4.<br><br>Approval of development consent under the Balranald LEP 2010. | Construction |

| Legislation | Approval Authority | Statutory approval/consent | Phase |
|---|---|---|---|
| *Fisheries Management Act 1994* (NSW) | Minister for Agriculture and Western New South Wales | Approval of a permit for dredging or reclamation under Part 7, Division 3. | Construction |
| *National Parks and Wildlife Act 1974* (NSW) | Minister for Energy and Environment | Approval of an Aboriginal Heritage Impact Permit under Part 6, Division 2. | Construction |
| *Crown Land Management Act 2016* | Minister of Lands and Water | Granting of licence to occupy Crown land. | Construction and Operation |

The Contractor(s) engaged by LMW to construct the Belsar-Yungera and Hattah Lakes North projects are required to comply with the conditions of the Statutory Approvals and to obtain all other approvals, licences, permits and consents required to construct the projects.

Parts of the projects impact private land with either project works or operations affecting land held in private ownership, some of which is held for conservation purposes. Prior to commencing any works on private land or causing inundation of private land through a watering event, land access agreements will be in place with the relevant landowner/s concerned.

### 4.1 General environmental duties

The general environmental duty, as introduced by the *Environment Protection Act 2017* (Vic), would apply to the design, construction and operation of the projects. This requires the projects to be delivered in a manner that minimises the risk of harm to human health and the environment from pollution and waste so far as reasonably practicable. Duties relating to pollution incidents, management of contaminated land and waste, together with specific duties, including with respect to noise, complement the general environmental duty. All of these duties and requirements have informed the development of the EDSs and will inform the various management plans and procedures to be prepared in accordance with this Framework.

# 5 Risk assessment and assessment of effects

Environmental risk assessment and the assessment of effects have been central to the development of the Belsar-Yungera and Hattah Lakes North projects, and the EDSs which will govern the development and implementation of the projects. This has been undertaken consistent with the Assessment Framework (Chapter 5 of the EES ) and the environmental risk assessment undertaken for the Belsar-Yungera and Hattah Lakes North projects (refer to Attachment II of the EES).

The development of the EDSs has been an iterative process with input from the specialist assessments undertaken as part of the preparation of this EES, as well as feedback from stakeholders and the Technical Reference Group (TRG). As part of this process, the specialists have considered mitigation measures to be implemented by the EDSs, as well as consultation requirements and performance monitoring and reporting required during the operation of the projects. The EDSs presented in this Framework have been developed for each discipline as part of the risk assessment and assessment of environmental effects in the preparation of this EES. The EDSs cover the operation and construction phases and are presented in Section 11.

The EDSs inform the environmental management documentation required by this EMF, which is the primary means that risk management will be achieved for the projects, as outlined in the Section 7.

As part of the preparation of the Construction Environmental Management Plan, the Contractor(s) are required to prepare a detailed assessment of risks and impacts associated with the design and specific construction work methods, building on the environmental risk and impact assessment undertaken as part of this EES. This assessment will need to ensure compliance with the EDSs, and approval conditions.

The project risk register will be maintained by the Contractor(s). It will be a 'live' document updated through regular reviews and in response to activity changes, work methods, legislation and policy or the occurrence of incidents and complaints. The risk register will link risks to relevant EDSs that define the management standard to manage potential impacts associated with that risk.

# 6 Environmental management documentation

This Framework will be implemented through environmental management documentation prepared by Mallee CMA, LMW, Parks Victoria, land and waterway owners and managers, and the Contractor(s). The documentation will address the requirements of relevant environmental legislation, approvals and approval conditions for compliance. The environmental management documentation required for the Belsar-Yungera and Hattah Lakes North projects, and by which, this Framework will be implemented is set out in Table 4.

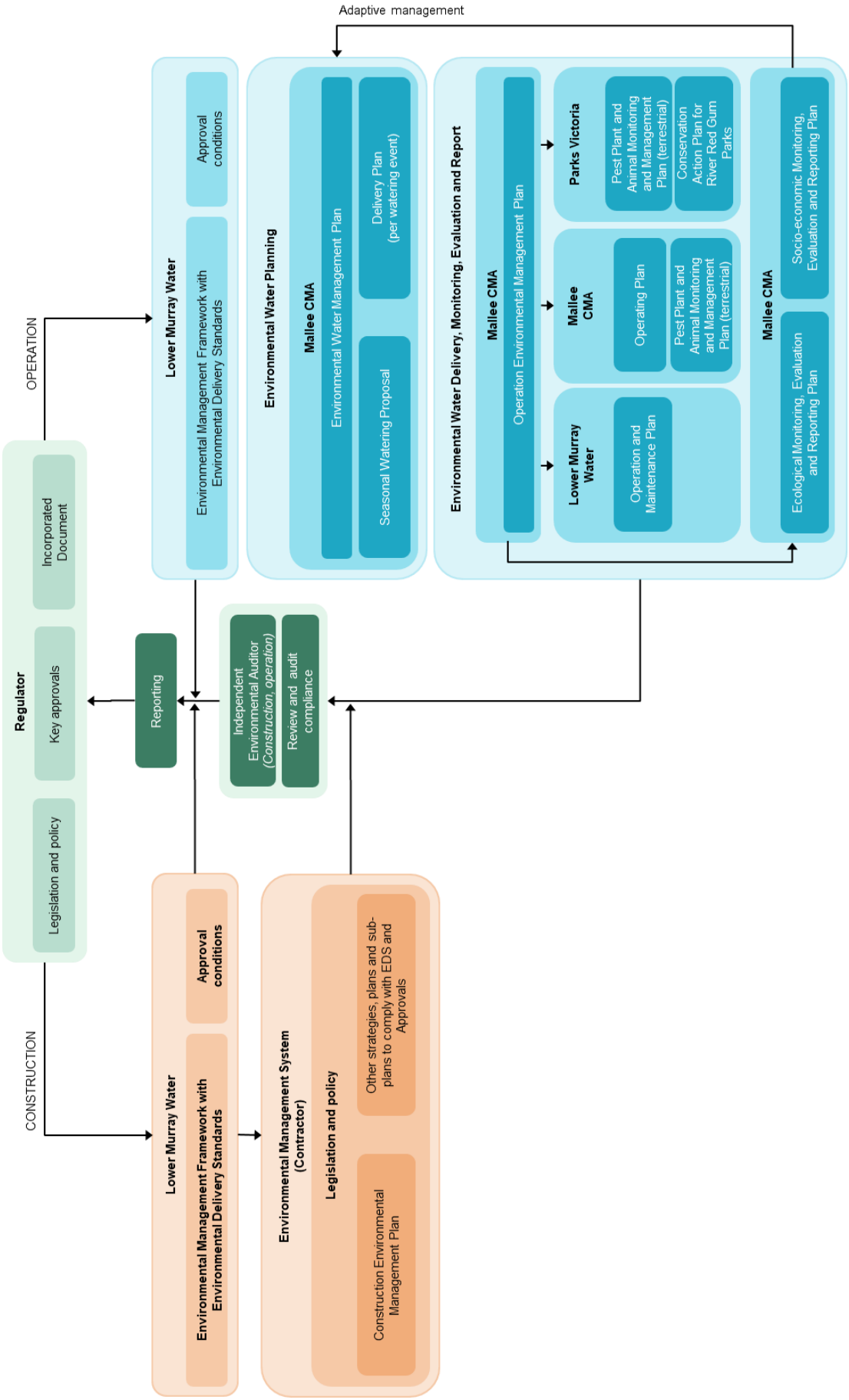
Figure 2 presents an overview of the environmental management documentation and their relationship with other components of this Framework.

**Table 4: Belsar-Yungera and Hattah Lakes North projects environmental management documentation**

| Level | Owner | Purpose | Documentation |
|---|---|---|---|
| 1- Strategic Framework | LMW | Plans that set the overarching requirements, standards and measures to be implemented for the development and operation of the Belsar-Yungera and Hattah Lakes North projects. | Environmental Management Framework<br><br>EDSs |
| 2- Management of operational impacts | Mallee CMA | Plans for the delivery of environmental water, the operation of the Belsar-Yungera and Hattah Lakes North projects and the monitoring and reporting of the outcomes, in accordance with ecological objectives. | Operation Environmental Management Plan<br><br>Environmental Water Management Plans<br><br>Seasonal Watering Proposal<br><br>Delivery Plan<br><br>Operating Plan<br><br>Ecological Monitoring, Evaluation and Reporting Plan<br><br>Socio-economic Monitoring, Evaluation and Reporting Plan |
| | LMW | Plans to manage the operation of the Belsar-Yungera and Hattah Lakes North projects infrastructure. | Operations and Maintenance Plan |

| Level | Owner | Purpose | Documentation |
|---|---|---|---|
| | VEWH environmental watering plans | Plans to deliver environmental water. | Seasonal Watering Plan |
| | Parks Victoria | Plans to manage pests and specific environmental impacts. | Pest Plant and Animal Monitoring and Management Plan (PPAMP) and Conservation Plan for River Red Gum Parks |
| 3- Detailed plans for construction impacts | Contractor management of construction impacts | Plans to manage the Belsar-Yungera and Hattah Lakes North projects' construction impacts to manage localised and specific issues. Independent Environmental Auditor will review and audit compliance. | Construction Environmental Management Plan<br><br>Sub-plans, including those required by the EDSs. |

**Figure 2: Environmental management documents**



# 7 Operation

## 7.1 Roles and responsibilities (operation)

This section defines the roles and responsibilities for environmental management during the operation of the Belsar-Yungera and Hattah Lakes North projects.

At the completion of the construction of the Belsar-Yungera and Hattah Lakes North projects, Mallee CMA will become the primary agency responsible for the operation of the projects and delivery of watering events, and the monitoring, evaluation and reporting on operational effects. Therefore, Mallee CMA will be the primary agency responsible for the implementation of the EMF and the EDSs during operation, and the agency responsible for the preparation and implementation of the approved Operation Environmental Management Plan.

LMW and Parks Victoria will also be responsible for the operation of the projects; with LMW responsible for the ongoing operation and maintenance of infrastructure, and Parks Victoria for implementing specified action plans, including the Pest Plant and Animal Monitoring and Management Plan and Conservation Action Plan for River Red Gum Parks on Crown land, for which it is the land manager. Environmental watering activities undertaken as part of the Belsar-Yungera and Hattah Lakes North projects will be supported by Parks Victoria and relevant land managers (including Traditional Owners and Interested Parties) who will undertake land management activities in line with the plans outlined in this EMF.

The roles and responsibilities are presented in Table 5, which also includes a discussion of the environmental water holders, who do not have a direct role in the project's operation, but are responsible for allocating the environmental water needed for watering events to be delivered by the projects. Further information regarding the process for the allocation and prioritisation of environmental water in Victoria, and the roles of the environmental water holders, can be found in Attachments V and VI of the EES.

**Table 5: Roles and responsibilities during operation for the Belsar-Yungera and Hattah Lakes North projects**

| Organisation | Role | Responsibility |
|---|---|---|
| Minister for Water (Vic) | Water regulation | Oversee Victoria's environmental water management policy framework, and its implementation.<br><br>Oversee the VEWH, including appointment and removal of commissioners and creating rules ensuring VEWH manages the water holdings in line with environmental water management policy.<br><br>Administer the broader water allocation and entitlements framework and the *Water Act 1989* (Vic). |
| MDBA (River Murray Operations department only) | River operator | Management and operation of the Murray River on behalf of the Basin States in accordance with the *Water Act 2007* (Cth).<br><br>Member of the Operations Group for the Belsar-Yungera and Hattah Lakes North projects.<br><br>Assist the waterway manager and asset owner by providing advice on Basin-wide operations and any implications for the Belsar-Yungera and Hattah Lakes North projects. Provide advice for environmental water planning and any future water delivery considerations.<br><br>Storage of data obtained at the structures throughout environmental watering events on the MDBA system.<br><br>Update and re-calibrate the water use model during and after environmental watering events. |

| Organisation | Role | Responsibility |
|---|---|---|
| DEECA – Water and Catchments Group (WCG) | Project sponsor | Develop and implement state policy on water resource and waterway management for the Minister for Water.<br><br>Develop and implement state policy for the management of environmental water in regulated and unregulated systems for the Minister for Water.<br><br>Manage the water allocation and entitlements framework for the Minister for Water.<br><br>Act on behalf of the Minister for Water to maintain oversight of the VEWH and waterway managers (in their role as environmental water managers).<br><br>Responsible for overseeing environmental water programs in Victoria, including legislation, policy, and investment programs.<br><br>Ensure integration of activities with the Basin Plan and related state initiatives.<br><br>Oversee the implementation of the VMFRP operation, monitoring, maintenance and adaptive management requirements to facilitate funding arrangements during the construction and operation. |
| Mallee CMA | Waterway manager | Established under the *Catchment and Land Protection Act 1994* (Vic) and holds a statutory function of managing waterways, drainage and floodplains under Part 10 of the *Water Act 1989* (Vic).<br><br>Responsible for the operational implementation of environmental watering activities as outlined in the *Water Act 1989* Statement of Obligations Catchment Management Authority (2006).<br><br>Prepare and undertake continuous review of the Operating Plans for the infrastructure to be built as part of the Belsar-Yungera and Hattah Lakes North projects.<br><br>Prepare and undertake continuous review of the Environmental Water Management Plans for the infrastructure to be built as part of the Belsar-Yungera and Hattah Lakes North projects.<br><br>Lead the planning for and coordination of environmental watering events for the Belsar-Yungera and Hattah Lakes North projects in accordance with the Environmental Water Management Plan and Operating Plans.<br><br>Convene the Operations Group for the Belsar-Yungera and Hattah Lakes North projects.<br><br>Develop proposals for watering actions within the systems they manage (refer to section 192A of the *Water Act 1989* (Vic,)) including Seasonal Watering Proposal and Delivery Plan in collaboration with the Operations Group.<br><br>Co-ordinate the delivery of environmental watering events in accordance with the Operating Plan, and the guidance set out in the Operating arrangements for the environmental water holdings of the Victorian Murray system guidance document.<br><br>Order environmental water and coordinate relevant activities, including undertaking relevant communications and monitoring of process and extent of inundation, and post-event reporting. |

| Organisation | Role | Responsibility |
|---|---|---|
| | | Coordinate monitoring and collate monitoring results in relation to watering events in line with the Monitoring, Evaluation and Reporting Plans.<br><br>Implement adaptive management processes as part of planning and delivering environmental water for the Belsar-Yungera and Hattah Lakes North projects, including consideration of monitoring results and observations.<br><br>Prepare and implement relevant environmental management documentation as applicable for operation, including (for example) the Operation Environmental Management Plan, the Pest Plants and Animals Monitoring and Management Plan (aquatic), and compliance with this Framework and relevant EDSs.<br><br>Ensure compliance with key statutory approvals and approval conditions. |
| LMW (as appropriate)<br><br>GMW (as appropriate)<br><br>Parks Victoria<br><br>SA Water (as appropriate)<br><br>MDBA River Management<br><br>CEWO<br><br>VEWH | Operations Group | Mallee CMA will convene an Operations Group, including agency representatives from Parks Victoria, LMW, GMW and MDBA River Management, and water holders.<br><br>Assist and advise on the commissioning and operation of the Belsar-Yungera and Hattah Lakes North projects.<br><br>Provide a forum to involve project partners in the decision-making process, and to consider broader system operations during planning and operation.<br><br>Ensure the necessary planning, monitoring, communication, and reporting arrangements are established prior to and during watering events and to identify and monitor any event risks or issues. |
| LMW | Asset owner and operator | Manage and operate water delivery infrastructure that connects water extracted from waterways to the locations nominated by the Mallee CMA under the *Water Act 1989* (Vic).<br><br>Own, operate and maintain VMFRP assets to manage the environmental water for the Belsar-Yungera and Hattah Lakes North projects in line with the Operation Environmental Management Plan.<br><br>Lead the coordination of and responsible for environmental management during the wet commissioning phase for the Belsar-Yungera and Hattah Lakes North projects.<br><br>Member of the Operations Group for Belsar-Yungera and Hattah Lakes North projects, contributing to the annual cycle of seasonal environmental water planning, including the review and endorsement of Seasonal Water Proposals.<br><br>Monitor, record and report the volume of water used during the operation of the VMFRP watering event to GMW as the Northern Victoria Resource Manager, and MDBA.<br><br>Responsible for ownership, operations and maintenance of infrastructure in accordance with the Section 27 licence conditions in respect of licences issued by Parks Vitoria under Section 27 of *the National Parks Act 1975* (Vic). |

| Organisation | Role | Responsibility |
|---|---|---|
| GMW | Northern Victoria Resource Manager | Resource manager for the Victorian Murray River system with statutory responsibilities under the *Water Act 1989* (Vic).<br><br>Undertake river operational planning and operate and manage the water storages and associated lands to meet the requirements established under the *Water Act 1989* (Vic). This includes the storage and release of water in accordance with the provisions of bulk and environmental entitlements.<br><br>Responsible for the liaison and joint planning with the MDBA to ensure that the shared resources of the Murray River system are effectively managed.<br><br>Member of the Operations Group for Belsar-Yungera and Hattah Lakes North projects, contributing to the annual cycle of seasonal environmental water planning, including the review and endorsement of Seasonal Water Proposals.<br><br>Work with the VEWH and waterway managers to plan the delivery of environmental water.<br><br>Undertake seasonal determinations of water available to entitlement holders and monitor compliance with entitlements, including environmental entitlements. |
| | State Constructing Authority | Manage prescribed water supply infrastructure, such as dams and regulators, to deliver environmental water in accordance with the MDBA. |
| Parks Victoria | Land manager | Established under the *Parks Victoria Act 2018* (Vic) to deliver actions that protect, conserve and enhance the cultural and natural values on Parks Victoria managed land, whilst providing for the land to be appropriately used, enjoyed and appreciated, so it remains healthy and resilient for current and future generations.<br><br>Parks Victoria is the Land Manager of the Hattah-Kulkyne National Park, Murray River Park and Lake Powell and Carpul Wildlife Reserve, reserved under the *National Parks Act 1975* (Vic) and *Crown Land (Reserves) Act 1978* (Vic), where the Belsar-Yungera and Hattah Lakes North projects are proposed.<br><br>As Land Manager, where environmental water delivery infrastructure is proposed to be constructed and operated, Parks Victoria is a VMFRP partner throughout the project life. Parks Victoria is working collaboratively with project partners to ensure the objectives of the *Parks Victoria Act 2018* (Vic) are fully considered throughout the planning and design phase.<br><br>Operation and maintenance of the environmental water delivery assets will be licenced to LMW, however, the environmental water itself will disperse through the waterways, into wetlands and across the floodplain on significant areas of land managed by Parks Victoria.<br><br>Member of the Operations Group for Belsar-Yungera and Hattah Lakes North projects, contributing to the annual cycle of seasonal environmental water planning, including the review and endorsement of Seasonal Water Proposals.<br><br>Parks Victoria will also work closely with all partners to identify opportunities to increase the capacity for Parks Victoria to deliver on-ground actions that directly support the achievement of the VMFRP and |

| Organisation | Role | Responsibility |
|---|---|---|
| | | other site- based ecological objectives, and ensure the protection of cultural heritage within the entire project footprint; and encourage and enable visitor appreciation.<br><br>As the land manager, Parks Victoria will implement operational plans developed via the VMFRP approvals process, including the Pest Plants and Animals Monitoring and Management Plan (terrestrial) and the Conservation Action Plan for River Red-Gum Parks.<br><br>Deliver actions that protect, conserve and enhance the cultural and natural values of the Hattah-Kulkyne National Park, the Murray River Park and Lake Powell and Carpul Wildlife Reserve in accordance with the requirements of the *Parks Victoria Act 2018* (Vic), whilst providing for the land to be appropriately used, enjoyed and appreciated.<br><br>Engage with site visitors about environmental water- related matters.<br><br>Participate in the periodic review of relevant operational documentation as outlined in this EMF and in the Operation Environmental Management Plan, as required, participate in operational planning, including adaptive management processes for environmental water delivery and land management.<br><br>Approve watering on public land and managing public access during and after an event.<br><br>Provide details of site ecological responses and any future implications. |
| DEECA Bushfire and Forest Services (BFS) | | Provide input into water management and participate in the review of relevant operational documentation., including development and review of key components of the adaptive management framework as outlined in this document. |
| CEWH | Environmental water holder | Established under the *Water Act 2007* (Cth) to hold and manage Commonwealth environmental water holdings in line with the Basin Plan.<br><br>Supported by CEWO to make decisions on the use of environmental water.<br><br>Provides water across the Murray-Darling Basin to meet environmental priorities and targets in accordance with the requirements of the Basin Plan.<br><br>Coordinates with partners in The Living Murray (TLM) program and States to ensure a Basin-wide approach is taken to the delivery of environmental water in line with the Basin Plan. |
| VEWH | Environmental water holder | Established under the *Water Act 1989* (Vic) to hold and manage Victoria's Environmental Water Holdings.<br><br>Coordinates with CEWO, DEECA, partners in TLM program and other States to ensure effective implementation of environmental water policy and management.<br><br>Responsible for state-wide planning for the use of Victoria's environmental water and allocating its water to seasonal environmental watering actions. |

| Organisation | Role | Responsibility |
|---|---|---|
| | | Assist with compilation and review of reports issued to MBDA, as well as reviewing volumes of environmental water used. |
| SCBEWC | Environmental water coordinator | An advisory body established by the Murray Darling Basin Ministerial Council, including environmental water and river operations representatives from the Commonwealth, New South Wales, South Australian and Victorian governments.<br><br>Supports the coordination of the delivery of all environmental water in the Southern Connected Murray-Darling Basin, consistent with the Basin Plan.<br><br>Responsible for decisions on the use of jointly- held water available under the TLM portfolio and the governance of TLM programs. |
| Traditional Owners and Interested Parties | Landowners and managers | Provide input into water management and participate in the review of relevant operational documentation as outlined in this EMF and the projects' Operation Environmental Management Plan.<br><br>Invited to raise and identify any cultural or spiritual links to the Belsar-Yungera and Hattah Lakes North areas for inclusion in water management processes. |
| NSW National Park and Wildlife Service | Land manager and asset owner (NSW) | Responsible for operating and maintaining the physical VMFRP infrastructure located in NSW.<br><br>Attend and contributes to the Belsar-Yungera and Hattah Lakes North Operations Group meetings, as required. |

## 7.2 Environmental watering process

The environmental water management cycle comprises four key stages, as shown in Figure 3 and Table 6 below.

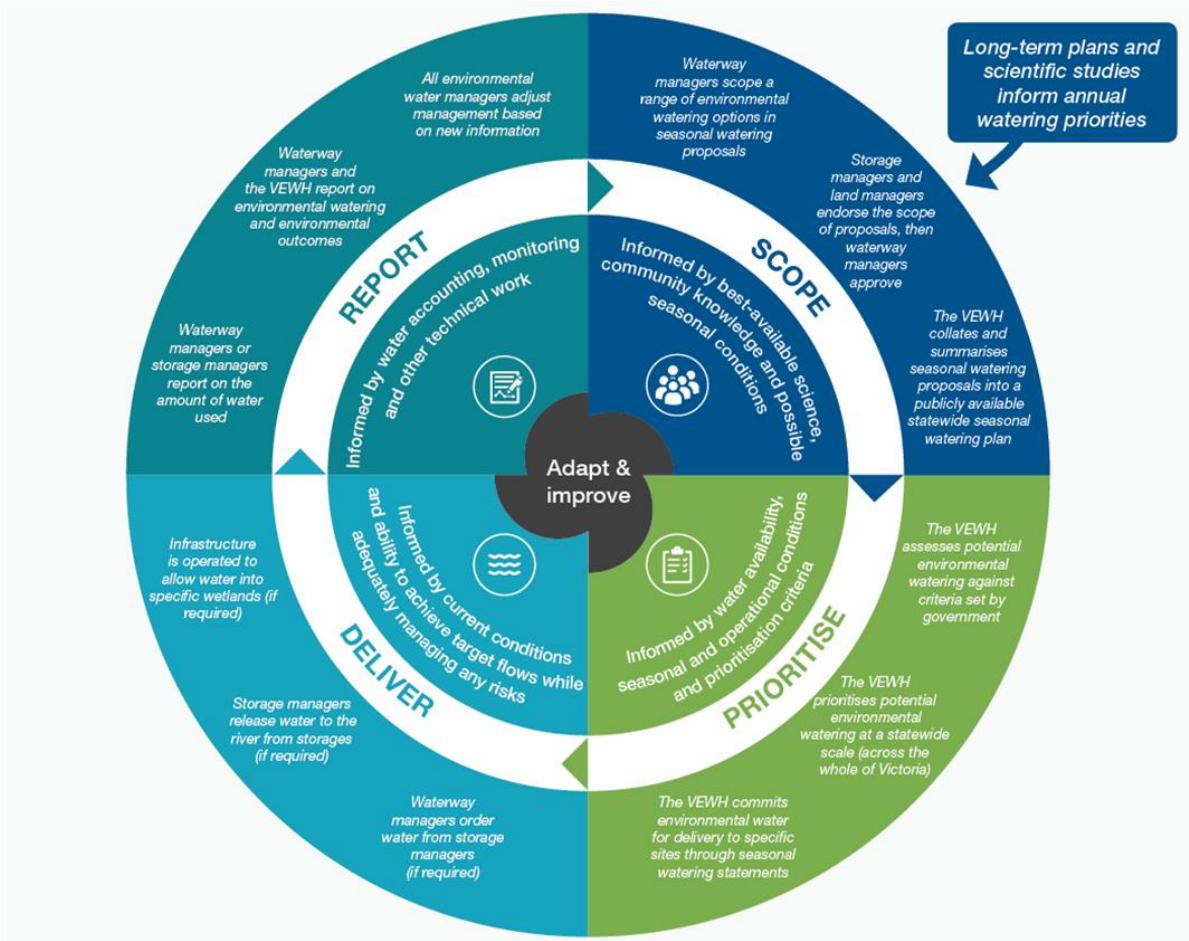



**Figure 3: Annual environmental water management cycle. Source: VEWH, 2015**

Note that Figure 3 only includes VEWH, however CEWH and the MDBA also hold environmental water entitlements in Victoria through TLM program. Management processes for environmental water held by CEWH and the MDBA are very similar to those represented in the diagram above.

Table 6, below, further summarises the four key stages: Scope, Prioritise, Deliver and Report. Further description, including responsibilities for preparation, review and approval of the key documentation referred to in Figure 3 and Table 6 is found in Section 7.3. Further description of the environmental water allocation process can be found in Attachments V and VI of the EES.

**Table 6: Four key stages of the environmental watering process**

| Stage | Process | Responsibility |
|---|---|---|
| Scope | Seasonal watering proposals are made annually by waterway managers to scope potential environmental watering actions for the upcoming year. These proposals are informed by engagement with local community representatives and agencies, long-term plans and studies (such as regional waterway strategies, scientific studies and river or wetland-specific environmental water management plans), and lessons learned through previous environmental watering. Adaptive management processes consider the site objectives and the findings and observations from monitoring programs in preparation of the seasonal watering proposals.<br><br>Potential environmental watering is categorised as drought, dry, average and wet to very wet planning scenarios to provide options for environmental watering depending on seasonal conditions and water availability. These planning scenarios determine the environmental watering objectives to be followed, should they eventuate. | Prepare Seasonal watering proposal – Mallee CMA<br><br>Prepare Seasonal Watering Plan – VEWH |

| Stage | Process | Responsibility |
|---|---|---|
| | Each June, VEWH produces a Seasonal Watering Plan that synthesises the various proposals and provides a preview of all potential environmental watering in Victoria for the upcoming 12 months. | |
| Prioritise | Where the need for environmental water exceeds the water available for this use (for example demand outweighs supply), the environmental water holder must make difficult trade-offs regarding where the available environmental water is directed.<br><br>Such decisions are influenced by a variety of factors, including the watering histories of rivers and wetlands, seasonal conditions in different regions and risk considerations in or near rivers and wetlands. VEWH has developed a set of criteria to guide the prioritisation process, refer to Attachment V and VI of this EES for further information on the prioritisation process. | VEWH |
| Deliver | To deliver environmental water committed to particular river reaches or wetlands, the waterway manager responsible for these locations places an order with the relevant storage manager, to specify the desired volume of water per day to be delivered.<br><br>Water delivery methods differ depending on the river or wetland, including release to a river from a storage or to wetlands via channels, gates, outlets and pumps.<br><br>Potential risks, such as the flooding of private property, are considered before any environmental water is delivered.<br><br>Other types of water, such as unregulated flows following heavy rainfall, can naturally meet environmental objectives and result in environmental water not being required.<br><br>The asset owner and operator deliver environmental water in accordance with the instruction issued by the waterway manager. | Storage manager – GMW<br><br>Waterway manager – Mallee CMA<br><br>Asset owner and operator – LMW |
| Report | Storage or waterway managers report the actual volumes of water delivered to specific rivers or wetlands. Each year this water used for environmental water deliveries is 'debited from' environmental entitlements held by environmental water holders.<br><br>Informed by monitoring, waterway managers and environmental water holders report on benefits realised from environmental watering and lessons learned via their websites.<br><br>Environmental monitoring, evaluation and reporting are considered in adaptive management measures and subsequent Seasonal watering proposals and Plans. | Storage manager – GMW<br><br>Waterway manager – Mallee CMA |

### 7.2.1 Adaptive management

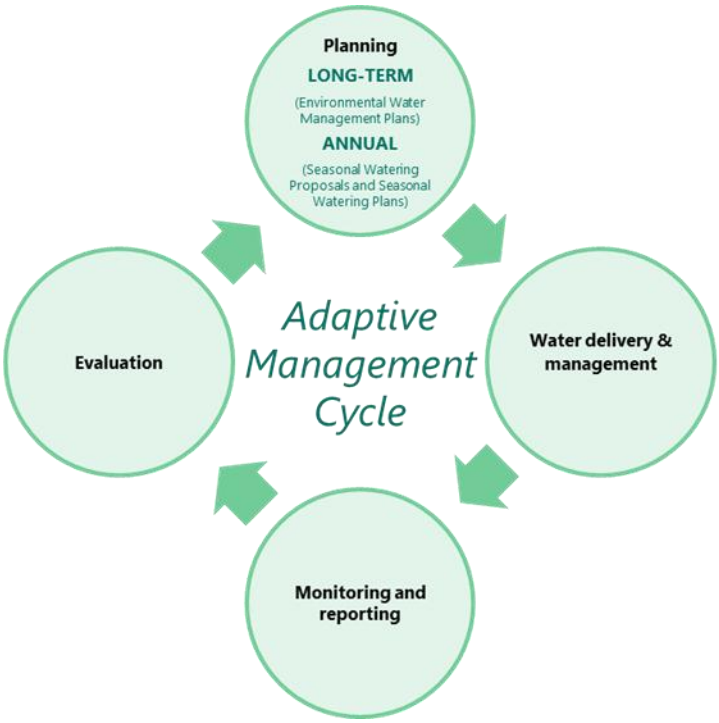
The environmental water planning and delivery framework in Victoria, including the planning, prioritisation and use of environmental water, is delivered by program partners to align the environmental water deliveries with the site objectives, and to respond to observations and learnings from the monitoring programs. This framework is supported by an adaptive management cycle for environmental water, as shown in Figure 4, its components are planning, watering delivery and management, monitoring and reporting and evaluation. The components of the adaptive management framework work together to ensure that lessons are learned from environmental watering actions and program partners iteratively improve the way environmental watering is undertaken using the best available evidence.

The Belsar Yungera and Hattah Lakes North projects would be undertaken within the existing environmental water planning and delivery framework and adaptive management cycle. Therefore, monitoring, evaluation and reporting are central to the systematic review of project performance relative to explicitly articulated objectives and targets and for effective delivery of lessons learned back into the adaptive decision-making. The objectives and targets for each site are prescribed in the Environmental Water Management Plans, and the monitoring programs as described in the Monitoring, Evaluation and Reporting plans are specifically designed to support collection of data to analyse whether these are being met.

Land managers and river operators are included in the operational planning cycle which include adaptive management processes to incorporate learnings and risk management

Further detail on the adaptive management framework will be provided in the Operation Environmental Management Plan.

**Figure 4: Typical adaptive management cycle for environmental water**




The key documents and responsibilities of the adaptive management cycle for the Belsar-Yungera and Hattah Lakes North projects are outlined in Table 7. Where indicated in Table 7, outcomes of the EES process have been incorporated into document updates.

**Table 7: Adaptive management documents and responsibilities**

| Adaptive management phase | Relevant plans and documents | Updated following EES outcomes | Responsibility | Refer to |
|---|---|---|---|---|
| Planning | Long term planning: | Yes | Mallee CMA | 7.3.2 |

| Adaptive management phase | Relevant plans and documents | Updated following EES outcomes | Responsibility | Refer to |
|---|---|---|---|---|
| | Environmental Water Management Plan | | | |
| | Annual planning:<br><br>Seasonal Watering Proposal<br><br>Seasonal Watering Plan | Not required as updated annually | Mallee CMA<br><br>VEWH | 7.3.3 |
| Water delivery and management | Delivery Plan<br><br>Operating Plan | Not required for Delivery Plan as updated for each environmental watering event.<br><br>Operating Plan will be updated as required. | Mallee CMA | 7.3.4<br><br>7.3.5 |
| Monitoring and reporting | Ecological Monitoring, Evaluation and Reporting Plans<br><br>Socio-economic Monitoring, Evaluation and Reporting Plans<br><br>Ecological monitoring reports<br><br>Environmental watering database | Yes | Mallee CMA | 7.4.2 |
| Evaluation | Adaptive Management Checkpoint<br><br>Watering Event Lessons Record<br><br>Development of Seasonal Watering Proposal<br><br>Review and update of Environmental Water Management Plan | Not required as updated following environmental watering event | Mallee CMA | 7.4.3<br><br>7.3.2<br><br>7.3.3 |

Adaptive management is inherent in the Mallee CMA's day-to-day management of environmental watering. The three main pathways Mallee CMA uses to identify inputs to the adaptive management process (also referred to as lessons) are:

- Monitoring to detect differences between what was planned and the outcomes at the environmental watering site
- Incidental observations by managers, operators or other observers that identify opportunities to reduce risk or improve outcomes

- Research or investigations into hydraulic or ecological management practices that could improve the conceptual models on which operations are based.

Further detail on the key elements of the adaptive management process is contained in Section 18.8.3 and 18.8.4.

## 7.3 Environmental management documentation (operation)

The Operation Environmental Management Plan and other operational plans will be developed to describe the specific processes, procedures, management and mitigation measures that will be implemented as part of the operation of the Belsar-Yungera and Hattah Lakes North projects. To the extent relevant, these will be developed, reviewed and approved in line with the existing environmental watering processes and arrangements established by the *Water Act 2007* (Cth), the *Water Act 1989* (Vic) and the Basin Plan.

As outlined in Table 8, these plans will be prepared by Mallee CMA, LMW and Parks Victoria, consistent with their existing statutory responsibilities. They will require input and contributions from program partners and a range of stakeholders as part of their preparation and review processes. The plans will be prepared, reviewed and approved as described in Table 8.

The EDSs outlined in Section 11 also specify the preparation and implementation of the plans required for operation.

**Table 8: Plans and frameworks required for the operation of the Belsar-Yungera and Hattah Lakes North projects**

| Operational document overview | Approve and/or accept | Issue and review timing |
|---|---|---|
| The **Environmental Management Framework** provides a transparent framework to manage the environmental effects of the Belsar-Yungera and Hattah Lakes North projects in order to meet statutory requirements, realise project objectives and sustain stakeholder confidence. It has been prepared by LMW. | **Initial Issue and all Revisions:**<br><br>Minister of Planning (or delegate) | **Initial Issue**<br><br>Prior to commencement of construction, excluding preparatory buildings and works<br><br>**Reviewed**<br><br>As required |
| The **Operation Environmental Management Plan** (OEMP) addresses the potential environmental impacts of operation and maintenance activities. It will be prepared by Mallee CMA. | Secretary of DEECA (or delegate) | **Initial Issue**<br><br>Prior to commencement of environmental watering<br><br>**Reviewed**<br><br>As required |
| The **Environmental Water Management Plan** is a project specific plan that provides detailed management information at the asset scale and a framework for water planning, delivery, monitoring and consultation processes. It will be prepared by Mallee CMA. | **Initial issue and All Revisions**<br><br>• DEECA WCG and VEWH | **Initial Issue**<br><br>Prior to commencement of environmental watering<br><br>**Reviewed**<br><br>Five years or as needed |
| The **Seasonal Watering Proposal** describes the environmental water requirements in the coming year. It will be prepared by Mallee CMA in consultation with Parks Victoria (as land manager providing consent for planned watering on land they manage). | • VEWH (as decision maker for which proposals are carried forward into the Seasonal Watering Plan) | **Issue**<br><br>Prior to an environmental watering event |

| Operational document overview | Approve and/or accept | Issue and review timing |
|---|---|---|
| The **Delivery Plan** describes the objectives of the environmental watering event and details of a specific environmental water delivery process. It will be prepared by Mallee CMA. | • VEWH | **Issue**<br><br>Prior to an environmental watering event |
| The **Operating Plan** will provide guidance on the operational planning and delivery of environmental water. It will be prepared by Mallee CMA. | Initial Issue and All Revisions:<br><br>• DEECA WCG | **Initial Issue**<br><br>Prior to commencement of environmental watering<br><br>**Reviewed**<br><br>Five years or as needed |
| The **Operations and Maintenance Plan** provides the framework for operating and maintaining the water management and associated assets. It will be prepared by LMW. | • LMW | **Initial Issue**<br><br>Prior to commencement of environmental watering<br><br>**Reviewed**<br><br>Annually |
| The **Pest Plant and Animal Monitoring and Management Plan** provides a framework for detecting and managing terrestrial and aquatic pest presence and activity due to managed environmental water events. It will be prepared Parks Victoria and Mallee CMA. | • Parks Victoria (Terrestrial)<br>• Mallee CMA (Aquatic) | **Issue**<br><br>Prior to an environmental watering event |
| The **Conservation Action Plan for River Red Gum Parks** defines and prioritises conservation strategies for the River Red Gum Park Landscape, broadly describes the expected outcomes of these strategies and outlines what can be realistically achieved to tackle threats to ecosystems. The Plan is prepared by Parks Victoria. | • Parks Victoria | **Issue**<br><br>Prior to an environmental watering event |
| The following **Monitoring, Evaluation and Reporting Plans** set out an approach for evaluating the ecological, cultural and socio-economic components and outcomes of the VMFRP:<br><br>• Ecological Monitoring, Evaluation and Reporting Plan<br>• Socio-economic Monitoring, Evaluation and Reporting Plan.<br><br>The Plans will be prepared by Mallee CMA. | • DEECA WCG | **Initial Issue**<br><br>Prior to commencement of environmental watering<br><br>**Reviewed**<br><br>Five years or as needed |

| Operational document overview | Approve and/or accept | Issue and review timing |
|---|---|---|
| The **Communications and Stakeholder Engagement Plan – Operations** sets out the ongoing commitments for consultation prior to, during and after managed inundation events | • Mallee CMA | **Initial Issue**<br><br>Prior to commencement of environmental watering<br><br>**Reviewed**<br><br>Five years or as needed. |

### 7.3.1 Operation Environmental Management Plan

The Operation Environmental Management Plan will be prepared in accordance with the requirements of the EMF and EDSs.

The Operation Environmental Management Plan will be informed by the findings and conclusions of this EES and will address potential environmental impacts of operation and maintenance activities. It will include all EDSs relating to the operation (including wet commissioning) of the Belsar-Yungera and Hattah Lakes North projects and any land and waterway management activities required to support effective environmental watering. The Operation Environmental Management Plan will be informed by relevant changes and updates in the operational frameworks and responsibilities.

The Operation Environmental Management Plan will identify the nature of operational activities and environmental features of the Belsar-Yungera and Hattah Lakes North projects and contain detailed procedures and responsibilities for:

- Achieving compliance with the operational EDSs
- Achieving compliance with statutory approvals, approval conditions and relevant legislation
- Identifying, managing and monitoring environmental risks and issues during operation and implementing contingency measures
- Site inductions, training, competency and awareness
- Communication and reporting
- The process for preparation, approval and implementation of a Monitoring, Evaluation and Reporting Plan with objectives, targets and indicators to be used for the monitoring and evaluation of biodiversity response
- Environmental monitoring, reporting and auditing requirements
- A change management process for amendments to the Operation Environmental Management Plan with all major amendments to be approved by the Secretary of DEECA, and minor amendments prepared by Mallee CMA (refer to Section 18.10 for definitions of major and minor). All amendments requiring a change to the Special Controls Overlay, EMF or EDSs will approval from by the Minister for Planning in accordance with the Incorporated Document. Any change to the Incorporated Document will require amendment to the relevant planning schemes.
- Managing complaints, incidents, non-conformances and taking corrective and preventative action
- Emergency preparedness and response, including arrangements for containing environmental damage and attendance on-site in the event of an emergency
- Incidents and emergency management during operation, including reporting and recording processes
- Measures and processes for review and continuous improvement.

The Operation Environmental Management Plan will be implemented by Mallee CMA, LMW and Parks Victoria. The following agencies will be consulted to inform the preparation of, and in the event of a major amendment to, the Operation Environmental Management Plan:

- LMW
- GMW (as it relates to the Hattah Lakes North project)
- MDBA (as it relates to the Hattah Lakes North project)
- Parks Victoria
- DEECA BFS.

The Operation Environmental Management Plan will require approval by the Secretary of DEECA (or delegate) prior to the commencement of environmental watering.

### 7.3.2 Environmental Water Management Plan

Operational management of the Belsar-Yungera and Hattah Lakes North projects and their water regime will each be guided by a project- specific Environmental Water Management Plan. The Environmental Water Management Plan will align with the Environmental Watering Plan prepared by the MDBA in accordance with Chapter 8 of the Basin Plan. It will also align with the Environmental Water Management Plan Guidelines for Rivers and Wetlands prepared by DEECA WCG. Groundwater salinity effects on the Murray River will be considered in accordance with the MDBA Salinity Management 2030 Strategy as needed. The Environmental Water Management Plan is characterised by a long-term focus on rivers or wetlands identified by Mallee CMA in their regional Waterway Strategy as priorities for environmental watering.

It will provide detailed management information at the asset scale and a framework for water planning, delivery, monitoring and consultation processes. It will be responsive to changing water resource conditions, opportunities and environmental priorities.

Environmental Water Management Plans are prepared for all environmental watering projects, including the Belsar-Yungera and Hattah Lakes North projects, which will include:

- Introduction of the asset (wetland, wetland complex or waterway) and the overarching aims of the Environmental Water Management Plan
- Summary of the consultation undertaken as part of preparing and/or updating the Environmental Water Management Plan, as well as the target audience for the document and modes of consultation required to manage environmental water delivery and promote adaptive management
- Asset overview, including the current management arrangements and potential sources of environmental water
- Overview of the typical hydrological regime of the asset, and how it may have been managed or operated under current or previous water management
- Presentation of the values associated with the asset, including where appropriate for specific species and communities, for which the objectives and targets will be set, and the watering requirements to meet the stated objectives and targets
- Overview of water-related threats to the asset that may limit the achievement of environmental objectives. This would include thresholds for action where monitoring provides leading indicators of risk and management measures to be used if a risk was realised (for example low water quality)
- Outline of the long-term goal for the Belsar-Yungera and Hattah Lakes North projects, defined and set time-bound environmental objectives that describe the intended outcomes of watering and measurable targets, with an associated target time by when the target must be achieved
- Environmental water requirements needed to meet the environmental objectives and the intended water regime, and the seasonally adaptive approach for the asset under different climatic conditions to be used as part of annual environmental water planning
- Description of the infrastructure to deliver environmental water and any constraints that may affect the timing, volume or duration of water delivery. This would include the operation of the Murray River and irrigation system to deliver water to the Belsar-Yungera and Hattah Lakes North projects through associated infrastructure
- The monitoring and assessment arrangements recommended to demonstrate the effectiveness of environmental water delivery to the asset, including the identification of the monitoring required to inform adaptive management and implementation of contingency actions and to assess the environmental response as a result of the changed water regimes. These will be further refined through the development of the Monitoring, Evaluation and Reporting Plans and a monitoring program (refer to Section 12)
- Description of any existing or recommended complementary works required to improve the outcomes of environmental water delivery (for example, interventions to restore or maintain landscape to an agreed baseline condition, interventions required to allow water to flow or pest plant and animal control within waterways, such as Carp control or aquatic weeds)
- Summary of the policy context for the Environmental Water Management Plan, including relevant roles and responsibilities for the Belsar-Yungera and Hattah Lakes North projects.

The draft Environmental Water Management Plans for the Belsar-Yungera and Hattah Lakes North projects will be reviewed and accepted by DEECA WCG and VEWH prior to finalisation and before any environmental watering being undertaken.

A review and update of the Environmental Water Management Plan will be undertaken every five years or as needed. The update of the Environmental Water Management Plan includes refining objectives and targets in response to any changes in site conditions and adaptive management outcomes. Any refinements will also result in a review of the monitoring program to ensure direct alignment between the site objectives and targets and the capture of monitoring data.

This review and update process sets the time-bounds for achieving the identified objectives. As part of the update, decisions, lessons and outcomes accumulated from previous planning, delivery events and monitoring data are reviewed, evaluated and integrated into the update. This information is derived from a centralised, site-specific repository knows as a Watering Event Lessons Record (refer to Section 7.4.1 for further detail).

The Environmental Water Management Plan will be prepared, reviewed, updated and implemented by Mallee CMA. Consultation to inform the preparation, review and update of the Environmental Water Management Plan will be undertaken with:

- DEECA BFS
- MDBA (as it relates to the Hattah Lakes North project)
- VEWH
- Parks Victoria
- Traditional Owners and Interested Parties
- Private landowners and managers
- Community.

### 7.3.3 Seasonal Watering Proposal and Plan

Informed by the Environmental Water Management Plan, a Seasonal Watering Proposal will be developed annually by Mallee CMA, which will include consideration of environmental watering events for the Belsar-Yungera and Hattah Lakes North projects. The decision to initiate an environmental watering event will be based on several factors, including water availability, floodplain water requirements, operational risks, the regional context, site objectives and targets, monitoring data and observations, and existing river operations.

The Seasonal Watering Proposal will be informed by conditions of the preceding year, strategic plans and technical advice, and community and stakeholder input. The Seasonal Watering Proposal:

- Describes the environmental water requirements in the coming year under a range of climatic scenarios to protect or improve the environmental values and health
- Outlines aims, targets and objectives for the upcoming year, aligned with the site objectives and targets from the EWMPs.
- Informs the development of environmental watering actions in the VEWH's Seasonal Watering Plan.

Prior to submission to the VEWH, the Seasonal Watering Proposals for each of the Belsar-Yungera and Hattah Lakes North projects will be subject to an external review process with key stakeholders including LMW, GMW, DEECA WCG, Parks Victoria and Traditional Owners and Interested Parties. Before the Seasonal Watering Proposal is submitted to the VEWH, it must be endorsed by the Mallee CMA Chief Executive Officer and Board. Once the Chief Executive Officer and Board have endorsed the proposal, the relevant land manager is required to endorse the proposal.

Seasonal Watering Proposals will be reviewed and considered by the VEWH, who consider the proposals against the annual environmental watering requirements for Victoria.

The Seasonal Watering Proposals will then be incorporated into the Seasonal Watering Plan, prepared by VEWH and describe the state-wide priorities for environmental water use in the coming year and consolidate all Seasonal Watering Proposals accepted by the VEWH.

### 7.3.4 Delivery Plan and Seasonal Watering Statement

Mallee CMA will prepare and implement a Delivery Plan for each environmental watering event to be carried out as part of the Belsar-Yungera and Hattah Lakes North projects. The Delivery Plan:

- Describes the environmental watering objectives of the event, including ecological and functional objectives
- Outlines the water requirements, including volume of water required, water source and timing and duration of water delivery
- Provides information regarding the delivery mechanism, delivery costs, evaluation of any risks, site governance and any additional approval requirements
- Includes a brief description of planned monitoring, expected outcomes and any relevant land and waterway management required
- Includes water data management and exchange arrangements with VEWH and MDBA
- Includes a communications and engagement plan for the watering event.

The Delivery Plans for each watering event required as part of the Belsar-Yungera and Hattah Lakes North projects will be reviewed and approved by the VEWH. Consultation to inform the development of the Delivery Plan will be undertaken with:

- LMW
- Parks Victoria
- GMW
- VEWH
- MDBA
- Traditional Owners and Interested Parties.

Following the approval of a Delivery Plan, the VEWH will issue a Seasonal Watering Statement, which will provide authorisation to use environmental water holdings and will enable Mallee CMA to undertake watering for the Belsar-Yungera and Hattah Lakes North projects by issuing instructions to the asset owner and operator, Lower Murray Water.

### 7.3.5 Operating Plan

An Operating Plan will be developed for each of the Belsar-Yungera and Hattah Lakes North projects, providing guidance on the operational planning and delivery of environmental water, as well as providing the framework for operation to meet the respective key ecological objectives and comply with relevant legislative requirements.

The Operating Plans will contain the following:

- Outlines the governance arrangements for managed inundation activities
- Summarises the roles and responsibilities of partner agencies
- Presents an overview of sourcing water for managed inundation events
- Decision-making protocols for prior to, during, and after watering events
- Overview of the site characteristics guiding managed inundation at the Belsar-Yungera and Hattah Lakes North projects and the key ecological objectives
- Overview of the operational thresholds that inform the planning and adaptive management of events
- Overview of the infrastructure built as part of the Belsar-Yungera and Hattah Lakes North projects, including design and control principles and fundamentals and naming conventions to be used
- Outline of the environmental watering scenarios designed for the Belsar-Yungera and Hattah Lakes North projects as well as watering regimes and operating scenarios
- Summary of external considerations for operation, including risks and mitigation measures
- Overview of water use for each of the operational scenarios, water requirements and water measurement arrangements
- Procedures and processes for the maintenance of monitoring equipment used to monitoring prior, during and after environmental watering events
- Overview of communication and consultation strategies, as well as communication protocols during managed events and the complaint management process
- Record of water management operations to inform the adaptive management processes for the Belsar-Yungera and Hattah Lakes North projects
- Links to additional supporting information and related documents.

The Operating Plans will be prepared and implemented by Mallee CMA and approved by DEECA WCG. Consultation with the following will be undertaken to inform the preparation of the Operating Plan:

- MDBA
- VEWH
- DEECA Regions, Environment, Climate Action and First Peoples (RECAFP) (for the preparation to ensure compliance with EES outcomes and not for ongoing reviews and updates)
- Lower Murray Water
- Parks Victoria
- Goulburn-Murray Water (for the Hattah Lakes North project)
- Traditional Owners and Interested Parties
- Private landowners and managers.

The Operating Plans are not intended to prescribe particular watering events. They are a 'living document' that will be further refined and updated over time if legislation changes or operations in the major river systems require it or

outcomes of monitoring identify an issue that requires rectification or there are significant advances in science or technology.

The Operating Plans inform the Operations and Maintenance Plan.

### 7.3.6 Operations and Maintenance Plan

The Operations and Maintenance Plan will be developed for each of the Belsar-Yungera and Hattah Lakes North projects. The Operations and Maintenance Plan provides the framework for operating and maintaining the water management and associated assets built for the Belsar-Yungera and Hattah Lakes North projects, and outlines:

- Roles and responsibilities for the operation of the Belsar-Yungera and Hattah Lakes North projects' structures
- Operating activities
- A description of the procedures and limits (operator controls) of plant and equipment used in the operation
- Permissible/safe operating levels, filling, and drawdown rates (if applicable)
- Permissible flow rates
- Coordination of flows (if applicable)
- Reporting and notification requirements
- Information on day-to-day operation with associated procedures for preparing, conducting, and reporting on the activities carried out, including any follow-up actions required
- Information on water usage to be shared with external stakeholders such as MDBA, GMW and VEWH
- Details of operating control limits, action triggers and associated response procedures details of alarm states (either identified through manual readings/observations or automatic via SCADA/Telemetry,) and response, notification, and reporting protocols
- Information on operational inspections and surveillance (where applicable) with associated procedures for preparing, conducting, and reporting on the activities carried out, including any follow-up actions required
- Procedures for reporting and recording incidents and emergencies during operation
- Asset management plans for undertaking regular maintenance of infrastructure (including a rebuild of damaged containment banks)
- Information on the procedures and processes for undertaking maintenance of access infrastructure, including new and existing access tracks.

The Operations and Maintenance Plan will be prepared and implemented by LMW. Consultation with the following will be undertaken to inform the preparation of the Operations and Maintenance Plan:

- MDBA
- CEWO
- VEWH
- GMW
- Mallee CMA
- DEECA RECAFP (for the preparation to ensure compliance with EES outcomes and not for ongoing reviews and updates)
- Parks Victoria
- Traditional Owners and Interested Parties
- Private landowners and managers.

The Operational and Maintenance Plan will be reviewed annually.

### 7.3.7 Land and waterway management

Land and waterway management activities are required to support the operation of the Belsar-Yungera and Hattah Lakes North projects to ensure effective environmental watering occurs and the associated ecological objectives are achieved. These land and waterway management and enhancement activities are required to:

- Manage risks associated with environmental watering, such as potential harm to cultural heritage, injury to public or staff (due to changed conditions), or impacts to public users, adjacent landholders and commercial operators because of park closures or restricted access
- Realise cultural, social and recreational benefits of environmental watering, such as providing for shared benefits for communities, including anglers, hunters, fishers, traditional owners, educators and, commercial operators, and connecting people and places in water- dependent environments and support community events, which have a flow on economic benefit for rural and regional communities
- Realise the proposed environmental outcomes from environmental water through management of associated threats such as grazing pressure, pest fish, terrestrial predators and environmental weeds, particularly where

environmental water creates favourable conditions that support the survival and proliferation of pest species which therefore have the potential to cause a decline to the existing condition as a result of the application of environmental water.

Parks Victoria, Mallee CMA and Traditional Owners and Interested Parties, as partners in land and waterway management, are closely involved in the planning and delivery of environmental water and these associated management and enhancement activities on public land. This is achieved through collaborative development of key planning and strategic documents such as the:

- Environmental Water Management Plan
- Operating Plan
- Seasonal Watering Proposals and Delivery Plans
- Pest Plant and Animal Monitoring and Management Plans (terrestrial and aquatic)
- Conservation Action Plan for River Red Gum Parks.

Collectively these describe a range of activities delivered by land and waterway managers and partner agencies which enable water delivery, facilitate floodplain restoration, and improve the visitor experience.

Pest Plant and Animal Monitoring and Management Plans will be developed for terrestrial and aquatic environment to detect and manage pest presence and activity due to managed environmental watering events. The Pest Plant and Animal Monitoring and Management Plan/s may be prepared for multiple projects and will include:

- A monitoring program to indicate pest presence and activity, which will inform adaptive management and treatment measures
- Thresholds for implementation of contingency management measures.
- Contingency measures, which may refer to existing policies, practices and procedures.

The monitoring program must include monitoring objectives, indicators and requirements (for example, parameters, locations and frequency) appropriate to identify the exceedance of thresholds for pest presence and activity. Locations must include culturally sensitive locations.

The terrestrial Pest Plant and Animal Monitoring and Management Plan will be prepared and implemented by Parks Victoria prior to the commencement of environmental watering. The aquatic Pest Plant and Animal Monitoring and Management Plans will be prepared and implemented by Mallee CMA prior to the commencement of environmental watering. Each plan will be approved by the respective agency and reviewed on an as needs basis.

The Conservation Action Plan for River Red Gum Parks is an existing plan that defines and prioritises conservation strategies for the River Red Gum Park landscape and broadly describes the expected outcomes of these strategies. The plan is designed to evolve and adapt according to changes in circumstance and scientific evidence. The plan is Victoria-wide and identifies:

- Descriptions of the conservation assets
- Threats to conservation outcomes
- Conservation strategies
- Performance measurement approaches
- Plan implementation approaches.

The Conservation Action Plan for River Red Gum Parks is prepared, authorised and implemented by Parks Victoria. It will be updated to incorporate the relevant outcomes of the EES process including the Pest Plant and Animal Monitoring and Management Plan prior to the commencement of environmental watering.

**Traditional Owners and Interested Parties delivering complementary measures**

Traditional Owners and Interested Parties have cared for and sustainably managed Victoria's cultural landscapes for thousands of years. Traditional Owners and Interested Parties have both a cultural obligation and a legal right to be custodians of their traditional land and waters and protect the unique natural and cultural values they contain.

The Victorian Government is committed to enabling self-determination for Traditional Owners and Interested Parties and Aboriginal Victorians through overarching policies and frameworks. The Belsar-Yungera and Hattah Lakes North projects will operate under these existing frameworks, with Mallee CMA continuing to recognise Aboriginal cultural values and knowledge in water and catchment planning and management through their existing requirements under the *Water and Catchments Amendment Act 2019* (Vic).

### 7.3.8 Communications and Stakeholder Engagement Plan – Operation

The requirements for this plan are set out in EDS SB3 (refer Table 12 in Section 11).

## 7.4 Operational performance management

Performance management and compliance will be monitored, evaluated, audited and reported on during the operation of the Belsar-Yungera and Hattah Lakes North projects in accordance with this EMF.

### 7.4.1 Monitoring and reporting

A key element of the environmental water planning and management framework is effective monitoring and evaluation which allows for adaptive management of environmental water.

Objectives and targets for each site are prescribed in the EWMPs. The monitoring program is designed to ensure that the data collection, analysis and reporting can be directly attributed to these objectives. This allows for the transparent reporting of the extent to which field observations are supporting the achievement of site objectives and targets from environmental watering actions.

A number of monitoring methods will be used to assess progress towards the ecological objectives of the Belsar-Yungera and Hattah Lakes North projects and to monitor compliance with the relevant EDSs and Statutory approvals conditions. These methods are captured in Section 12. The methods will be detailed in the Ecological Monitoring, Evaluation and Reporting Plan. The methods are developed with consideration to the objectives and targets, the range of potential methods available for the monitoring, and supporting attribution between environmental watering actions and observed response.

Monitoring will be undertaken for duration of the operation of the Belsar-Yungera and Hattah Lakes North projects.

Monitoring, evaluation, and reporting on the use of environmental water helps to build knowledge around the best way to improve the health of the rivers and wetlands and to ensure risks are appropriately managed. Ecological communities are complex and there are several other variables in addition to watering events. Accordingly, continuously monitoring rivers and wetlands and applying adaptive management processes are necessary to observe if environmental watering is achieving the desired result, and continually refine the program as necessary and appropriate.

The monitoring of environmental watering is generally the observation, recording and evaluation of one or more environmental flows and associated outcomes over a period of time using different tools and methods. As shown in Figure 5, there are three types of monitoring that are used in environmental watering projects under the VEWH monitoring framework:

- Operational monitoring (short-term) which is risk-based monitoring undertaken to ensure water is delivered as planned, provide observations of initial ecological responses and help manage unintended consequences
- Intervention monitoring (medium-term) which aims to understand the environmental response of environmental watering objectives and expected outcomes
- Condition monitoring (long-term) aims to understand the long-term changes in river and wetland condition in response to environmental watering actions.

The information gained from each type of monitoring is shared between program partners, scientists, and communities to build a comprehensive picture of the benefits of environmental watering.

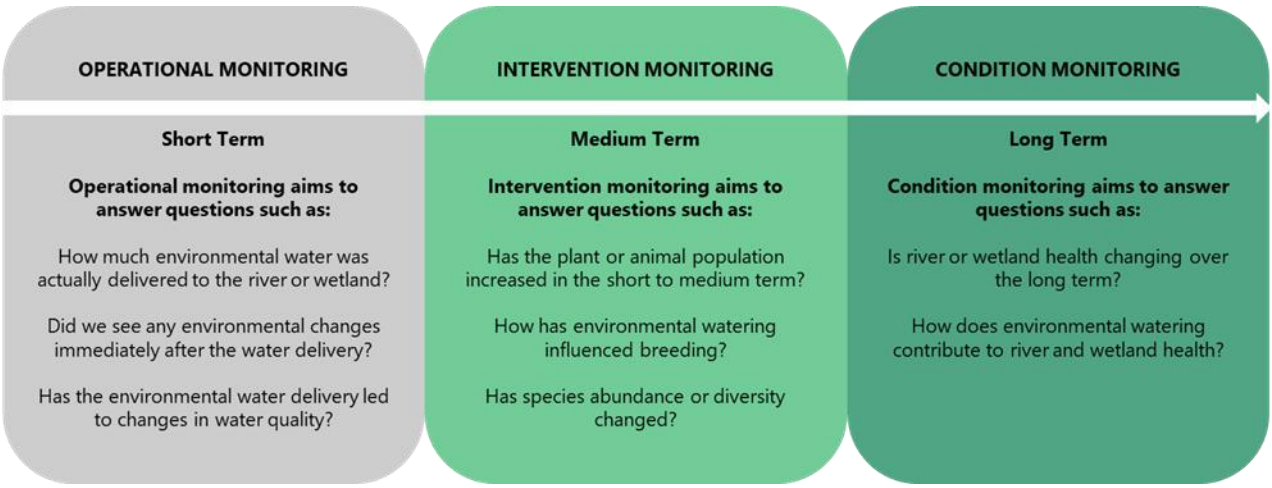



**Figure 5: Overview of types of monitoring (adapted from VEWH, 2022)**

The structure of the monitoring program for the Belsar-Yungera and Hattah Lakes North projects has been documented in Monitoring, Evaluation and Reporting Plans, which are described in more detail below.

**Monitoring, Evaluation and Reporting Plans**

Monitoring, evaluation and reporting are central components of the adaptive management cycle, the outcomes of which are used to inform environmental water planning, delivery and management. Two Monitoring, Evaluation and Reporting Plans have been drafted for VMFRP, which are:

- Ecological Monitoring, Evaluation and Reporting Plan
- Socio-economic Monitoring, Evaluation and Reporting Plan.

**Ecological Monitoring, Evaluation and Reporting Plan**

A long-term Ecological Monitoring, Evaluation and Reporting Plan has been prepared to capture data relevant to the ecological outcomes of the VMFRP. This includes monitoring over a baseline period of approximately five years before the infrastructure is completed and then ongoing while environmental watering occurs. The Ecological Monitoring, Evaluating and Reporting Plan has been developed based on high-level ecological objectives included in the Basin Plan environmental watering strategy, ecological performance objectives in terms of VMFRP's contribution to the Sustainable Diversion Limits adjustment mechanism under the *Water Act 2007* (Cth) and the Belsar-Yungera and Hattah Lakes North objectives and targets as prescribed in the EWMPs.

The Ecological Monitoring, Evaluation and Reporting Plan was developed using a combination of participatory stakeholder activities and, expert analysis, including a review of proposed objectives and targets. It also used the development of key evaluation questions, a review of regulatory obligations associated with the construction of VMFRP and an initial prioritisation of objectives.

In addition, the Ecological Monitoring, Evaluating and Reporting Plan:

- Has been developed using a strict line of logic from the ecological objectives and targets, to key evaluation questions and field based or remote-sensing based monitoring methods to an evaluation framework that will analyse data in response to the key evaluation questions, objectives and targets
- Has considered various contextual factors such as the overall objectives for VMFRP, Basin Plan, and Victorian state legislated monitoring requirements
- Attempts to align with other monitoring and evaluation programs within the Basin and Victoria, as well as the alignment of objectives and monitoring methods at a local and broader scale
- Where data or monitoring are not covered by other projects, develops new objectives, targets, key evaluation questions and monitoring methodologies. As noted above, these new methodologies are designed to align with other suitable monitoring projects to allow for a more comprehensive evaluation at regional and Basin-wide scales
- Aims to capture both terrestrial and aquatic ecological outcomes of the Belsar-Yungera and Hattah Lakes North projects.

The Ecological Monitoring, Evaluation and Reporting Plan contains:

- Overview of methodology used to develop the Ecological Monitoring, Evaluating and Reporting Plan
- Context, including objectives and alignment with other monitoring programs
- Ecological objectives and targets, aligned with the site EWMPs
- Monitoring and Evaluation Plan methods for specific ecological aspects, with consideration of existing Commonwealth or state monitoring programs
- Discussion and conclusions, with a summary of recommended methods and prioritisation.

Ecological outcomes for the Belsar-Yungera and Hattah Lakes North projects will be monitored and evaluated by Mallee CMA in line with the Ecological Monitoring, Evaluation and Reporting Plan. Baseline data and monitoring data collected as a result of this monitoring will be collated and provided by Mallee CMA to DEECA Murray Programs, which have established a central database for all environmental watering program baseline and ongoing ecological data.

An update to the Ecological Monitoring, Evaluation and Reporting Plan will occur following the outcomes of the EES assessment process. This update will ensure that:

- The monitoring and evaluation requirements identified as part of this EES, as identified in Section 12, are appropriately captured and incorporated
- There is direct alignment between the time-bound site objectives and targets, as prescribed in the Environmental Water Management Plans, with the design and methodology of the monitoring program
- The design of the monitoring program, including the method, spatial extents, and frequency of data capture, are sufficient for supporting the site objectives and targets
- The design and method of the monitoring program allows, as far as practicable, attribution between environmental watering actions and the observed ecological response.

The updated Ecological Monitoring, Evaluation and Reporting Plan will undergo a formal review and approval process with relevant stakeholders to ensure that all necessary requirements and alignments between documents are achieved.

The Ecological Monitoring, Evaluation and Reporting Plan will be reviewed and updated at least every five years, or as needed. The review and update will also be informed by the data collected from the baseline data collection (refer below), data collected as part of TLM monitoring programs, and other participatory stakeholder activities and expert analysis. The review will encompass all elements of the Ecological Monitoring, Evaluation and Reporting Plan including ecological objectives, targets, and monitoring and evaluation methods. As part of this review alignment of the performance objectives identified in Section 12 and in the Ecological Monitoring, Evaluation and Reporting Plan and the Environmental Water Management Plan will be considered and updates made where appropriate.

The Ecological Monitoring, Evaluation and Reporting Plan will be prepared, updated and implemented by Mallee CMA. Consultation to inform the preparation and updates of the Ecological Monitoring, Evaluation and Reporting Plan will be undertaken with the following agencies and groups:

- LMW
- DEECA WCG
- DEECA RECAFP (for the preparation to ensure compliance with EES outcomes and not for ongoing reviews and updates)
- Parks Victoria
- Traditional Owners and Interested Parties.

The Ecological Monitoring, Evaluation and Reporting Plan will be approved by DEECA WCG prior to the commencement of environmental watering and reviewed and updated every five years or as needed.

**Ecological monitoring reports**

Baseline ecological data collection is already underway based on the current version of the Ecological Monitoring, Evaluation and Reporting Plan, and will continue in order to collect five years of baseline data prior to operation commencing. The baseline data collection is undertaken by an environmental consultant engaged by Mallee CMA (currently Arthur Rylah Institute for Environmental Research) and an ecological monitoring report is prepared annually. A summary of the scope of the baseline data collected in the 2021/22 period is as follows:

- Vegetation
    - Wetland and understory vegetation species, in floodplain and wetland sites
    - Canopy health and extent (via measuring individual sites and extrapolation of modelled data)

- Birds
    - Waterbird counts at inundated wetland sites
    - Woodland birds at floodplain locations
- Fish
    - Water quality
    - Small bodied fish in seasonal wetlands
    - Large bodied fish in river / creek habitats
    - Fish movement (via tagging large bodied fish)
    - eDNA pilot study
- Frogs
    - Passive acoustic monitoring
    - Habitat assessments at acoustic monitoring locations
    - Tadpole surveys.

Baseline data has been collected, and the collection of ecological monitoring data will continue for as long as the projects are in operation and would reflect the objectives and methods in the Environmental Water Management Plan.

The annual adaptive management process will include assessment of the monitoring methodologies and recommend where changes could be made to improve effectiveness. The results of the annual monitoring will be considered by Mallee CMA as part of the annual planning sessions that inform the development of the Seasonal Watering Proposal and updates to the Environmental Water Management Plan and the Ecological Monitoring, Evaluation and Reporting Plan. In addition, the results of the annual monitoring will be used to review and, where appropriate, update the scope of the following years data collection and monitoring.

Results of the ecological monitoring and any resulting changes to operational plans, as core elements of adaptive management, are documented in the development of the Seasonal Watering Proposal. Mallee CMA will have responsibility for engaging an appropriate ecological monitoring consultant on an annual basis, and developing the scope of the monitoring to be undertaken, informed by the previous years monitoring and any updates to the Environmental Water Management Plan and the Ecological Monitoring, Evaluation and Reporting Plan.

**Environmental Watering Database**

Mallee CMA has developed a centralised Environmental Watering Database to capture data from environmental watering events such as:

- Watering dates, volumes, water accounting, delivery methods
- Watering justifications
- Environmental and ecological data such as mapping, risks, issues, lessons and knowledge, monitoring recommendations and outcomes, photos and observations.

The Environmental Watering Database is an internal database developed and maintained by Mallee CMA. It informs reviews and updates of the Environmental Water Management Plan.

**Socio-economic Monitoring, Evaluation and Reporting Plan**

The Socio-economic Monitoring, Evaluation and Reporting Plan sets out an approach for evaluating the cultural and socio-economic components and outcomes of the VMFRP. The Socio-economic Monitoring, Evaluation and Reporting Plan outcomes and indicators have been developed in collaboration with representatives from the VMFRP Project Control Group.

The Socio-economic Monitoring, Evaluation and Reporting Plan has been developed with four main components:

- Program logic: articulates the need, activities and desired short-term, mid-term and long-term socio-economic outcomes sought for the overarching VMFRP. Program logic provides the basis for measuring progress and evaluating success
- Monitoring: to track delivery of actions and give an indication of progress towards achieving outcomes. Monitoring helps to track progress and identify trends and risks early to adjust delivery, as required

- Evaluation: periodically assess achievement of outcomes and overall success, and to identify areas that may require further attention to ensure future success. Evaluation is guided by key evaluation questions to assess the overall appropriateness, efficiency, and effectiveness of environmental watering through the VMFRP works, and to provide insights for continuous improvement
- Reporting: to share progress, insights and information with stakeholders, responsible agencies, and decision-makers, and to celebrate achievements.

The Plan also provides an overview of governance arrangements, risk management, review requirements, assumptions, issues and data protocols related to delivery.

Socio-economic outcomes for the Belsar-Yungera and Hattah Lakes North projects will be monitored and evaluated by Mallee CMA in line with the Monitoring, Evaluation and Reporting Plan for Socio-Economic Components.

The Socio-economic Monitoring, Evaluation and Reporting Plan will be prepared and implemented by Mallee CMA. Consultation to inform the preparation of the Socio-economic Monitoring, Evaluation and Reporting Plan will be undertaken with the following:

- LMW
- VEWH
- DEECA WCG
- DEECA RECAFP
- Parks Victoria
- Traditional Owners and Interested Parties.

The Socio-economic Monitoring, Evaluation and Reporting Plan will be approved by DEECA WCG prior to the commencement of environmental watering and reviewed every five years or as needed.

### 7.4.2 Evaluation

Ongoing evaluation is a critical element of the adaptive management process. A number of internal processes have been established by Mallee CMA as part of their existing environmental water framework which are used to inform the ongoing review and update of the operational management documents including the Ecological Monitoring, Evaluation and Reporting Plan and the Environmental Water Management Plan.

**Adaptive Management Checkpoint**

As part of the ongoing improvement of environmental water planning and delivery by Mallee CMA, an annual Adaptive Management Checkpoint is conducted. The aim of the Adaptive Management Checkpoint is to formally reflect, review and evaluate the outcomes of the key planning and delivery decisions made during the annual planning and delivery cycle.

The outcomes from each Adaptive Management Checkpoint:

- Inform annual and progress reporting to VEWH and DEECA WCG
- Inform the Seasonal Watering Proposal and the Environmental Water Management Plan.
- Identify the elements to be documented in the Mallee CMA's Watering Event Lessons record

The Adaptive Management Checkpoint is an internal Mallee CMA process.

**Watering Event Lessons Record**

Key decisions and justifications, new knowledge and lessons learnt during the annual planning and water delivery cycle are documented in a 'live', site-specific centralised document called a Watering Event Lesson Record. The Watering Event Lesson Record provides an opportunity for planning and delivery lessons to be systematically recorded and retained for subsequent evaluation at the Adaptive Management Checkpoint.

The Watering Event Lesson Record is an internal Mallee CMA document.

### 7.4.3 Monitoring in Environmental Delivery Standards

Monitoring, Evaluation and Reporting Plans will be established for the delivery of VMFRP and to inform adaptive management of environmental watering. To support this, monitoring requirements for the Belsar-Yungera and Hattah Lakes North projects are embedded in the EDSs. The objectives, indicators and requirements (including,

where applicable, parameters, locations, frequency and auditing) for environmental monitoring and reporting requirements are outlined in the monitoring program in Section 12.

The monitoring indicators, frequency, locations and monitoring parameters will be informed by inputs such as regulatory requirements, environmental risk and expected benefits. The full monitoring program for the operation of the Belsar-Yungera and Hattah Lakes North projects can be found in Section 12, below..

### 7.4.4 Compliance Reporting

An Operational Environmental Performance Report will be prepared by Mallee CMA. As a number of agencies hold responsibilities in operation, Mallee CMA will co-ordinate the inputs from each responsible agency. The Operational Environmental Performance Report will include:

- Performance against obligations, including EDSs relevant to the operation
- A record of changes in accordance with the change management process outlined in Section 9
- A corrective action register.

The report will include:

- A statement of assurance from each organisation responsible for an obligation, including EDSs stating that to the best of their knowledge, the information in the report is accurate and reflects the extent to which their organisation is compliant with each Environmental Delivery Standard and obligation. The statement will note if there is non-compliance with one or more EDS or obligation and planned/completed actions to address non-compliance.
- A statement of assurance from Mallee CMA on changes to the Operation Environmental Management Plan that, to the best of their knowledge, the information in the report is accurate and reflects the extent to which they are compliant with respect to reporting and seeking approvals for changes to the Operation Environmental Management Plan. The statement will note if non-compliant changes have been made and actions to address non-compliance as part of the adaptative management framework.
- Supporting documentation referenced in the report (and other evidence required to demonstrate compliance) will be provided to DEECA on request (Note: Mallee CMA will maintain copies of documentation/evidence referenced in the report).

Agencies with responsibilities for obligations under the approved EMF will be required to contribute to the report, including:

- LMW
- Parks Victoria.

Each agency contributing to the report will contribute to each section of the report as follows:

- Obligations reporting and compliance (separate worksheet in the report)
    - State whether they have been compliant, partially compliant or not compliant with each obligation including EDSs they are responsible for.
    - Provide comment supporting their statement on compliance. If partially or not compliant this will include what action will be taken in response and where this is documented.
    - Provide cross references to documents and sections of documents that support their statement on compliance.
- Corrective Actions Register (separate worksheet in the report)
    - A Corrective Actions Register will be included as a separate worksheet in the report. This will be used to track implementation of corrective actions where there is non-compliance with an EDS or other obligations.

In addition, Mallee CMA will:

- Document any changes made to the Operation Environmental Management Plan, and whether changes are compliant, partially compliant or not compliant with the change management process
- State who was notified of the changes and who approved the changes made to the Operation Environmental Management Plan (where relevant)
- Provide cross references to the versions and sections of the Operation Environmental Management Plan where changes were made.

Note: As part of implementation, Mallee CMA will work with organisations responsible for each obligation to document evidence requirements for reporting against.

The Operational Environmental Performance Report will be prepared annually and will be submitted to the Minister for Planning, except where the Minister for Planning agrees that compliance reports are no longer necessary or less frequent reports are required. A summary of the Operational Environmental Performance Report will be made publicly available on DEECA's website.

### 7.4.5 Auditing

The Operations Group will appoint an Independent Environmental Auditor, which will bear primary responsibility for auditing compliance at the commencement of, and during, operation. The Independent Environmental Auditor will be a person, or body of persons, who:

- has sufficient qualifications and experience to discharge its responsibilities under this EMF;
- meets the criteria specified in AS/NZS ISO 19011:2014 Guidelines for auditing management systems; and
- is independent of the project and organisations involved in the planning and implementation of project operations, with no conflicts of interest and no involvement in the development of the OEMP.

Prior to the first managed inundation event, the Independent Environmental Auditor will review the plans and other documents required by, and referred to by, the EDSs and verify that they comply with this Framework, relevant Environmental Delivery Standards, statutory approvals and approval conditions.

The Independent Environmental Auditor will also conduct audits at 5-yearly intervals commencing five years after the first managed inundation event at each project, to assess compliance with this Framework (including the operation-specific EDSs , the Operation Environmental Management Plan, relevant sub-plans, relevant legislation, statutory approvals and approval conditions. The audit scope will include all operation-specific EDSs.

These audits will consider:

- Compliance with this Framework
- Compliance with the EDSs, mitigation measures, environmental management plans and documents
- Responses to non-conformances, incidents and complaints received
- The environmental effects caused by any non-conformances
- Application of the change management process where relevant
- Effective implementation of monitoring programs
- Previous audit outcomes
- Changes to regulations and environmental standards
- Compliance with approval conditions.

Results from the audits will be included in the operation environmental performance reports as outlined in Section 7.4.4.

## 7.5 Process, timing and consultation for operational documentation

The process and timing for the development of the plans required for the operation will be in accordance with the existing management systems of LMW and Mallee CMA, with provisions made for the requirements outlined in this Framework and the EDSs. This includes the process and timing for consultation with relevant parties, including statutory authorities such as the MDBA, CEWO, VEWH, DEECA, Parks Victoria, Traditional Owners and Interested Parties and water authorities, or as required by the EDSs, and approval documentation.

Consultation may include meetings, workshops, and exchange of documentation and correspondence with relevant parties. The extent of consultation and outcomes will be documented to demonstrate compliance with the plans as required by the EMF, the EDSs and the existing management systems of LMW, Mallee CMA and Parks Victoria.

This process will ensure that plans and procedures of a technical nature directly relevant to the functions of a specific statutory authority are appropriately developed in consultation with those agencies.

Where an EDS is expressed as requiring or being subject to the agreement, to the satisfaction or in accordance with the requirements of a specified stakeholder, reasonable endeavours must be pursued with that stakeholder. However, if the stakeholder does not respond within a reasonable period of time that is clearly communicated at the time of consultation, the requirement will be deemed to have been satisfied.

# 8 Construction

## 8.1 Roles and responsibilities (construction)

This section defines the roles and responsibilities for environmental management during the construction of the Belsar-Yungera and Hattah Lakes North projects.

**Table 9: Roles and responsibilities during Construction for the Belsar-Yungera and Hattah Lakes North projects**

| Organisation | Role | Responsibility |
|---|---|---|
| Minister for Planning | Regulator | Approve the EMF and EDSs.<br><br>Receive from LMW every three months the Construction Environmental Performance Report for the relevant reporting period.<br><br>As the responsible authority, the Minister is responsible for administering and enforcing the controls introduced by planning scheme amendment GC202. |
| Secretary to DEECA (or delegate) | Regulator | Approve the Construction Environmental Management Plan, and all major revisions to the approved Construction Environmental Management Plan. |
| LMW | Project proponent | Obtain key statutory approvals for the Belsar-Yungera and Hattah Lakes North projects.<br><br>Review, evaluate and approve construction drawings for the Belsar-Yungera and Hattah Lakes North projects.<br><br>Finalise the EMF and EDSs for approval by the Minister for Planning under the Incorporated Document.<br><br>Mandate Contractor compliance with this Framework including the EDSs.<br><br>Ensure that the requirements of this Framework and the EDSs have been addressed and are complied with in environmental management documentation prepared by the Contractor(s).<br><br>Review and evaluate the Construction Environmental Management Plan(s) and all other plans required by the EDSs, and all revisions to these documents.<br><br>Monitor compliance with the Construction Environmental Management Plan and all plans required by the EDSs and require corrective action to be taken as necessary.<br><br>Appoint an Independent Environmental Auditor. |

| Organisation | Role | Responsibility |
|---|---|---|
| | | Liaise with regulators and other agencies as required.<br><br>Conduct stakeholder engagement and community consultation activities. Address the concerns of stakeholders and community as required.<br><br>Receive environmental audit reports prepared by the Independent Environmental Auditor.<br><br>Prepare Construction Environmental Performance Reports every three months, which include a summary of the findings of the Independent Environmental Auditor for the relevant reporting period.<br><br>Prepare and provide to the Minister for Planning every three months the Construction Environmental Performance Report for the relevant reporting period. |
| LMW<br><br>GMW<br><br>Mallee CMA<br><br>North Central CMA<br><br>Parks Victoria | Project Control Group | On behalf of the LMW Board and DEECA WCG, responsible for the overall efficient and effective delivery of the projects through to construction completion and handover, on behalf of the LMW Board and DEECA WCG. The Project Control Group consists of the following members and representatives:<br><br>• Independent Project Control Group Chair<br>• LMW – Managing Director<br>• GMW – General Manager, Infrastructure Delivery Services<br>• Mallee CMA – Chief Executive rOffice (CEO)<br>• North Central CMA – CEO<br>• Parks Victoria – Regional Director, Northern Victoria<br>• Independent Advisor – Traditional Owner engagement and project management. |
| Contractor(s) | Design and delivery | Comply with all statutory approvals and approval conditions regarding approvals obtained by LMW and obtain all other necessary approvals and consents for the Belsar-Yungera and Hattah Lakes North projects.<br><br>Comply with this Framework, contract specification and all legislative requirements, approvals, approval conditions and EDSs.<br><br>Ensure that all sub-contractors similarly comply with such requirements and take corrective action as necessary.<br><br>Responsible for the dry commissioning phase for the Belsar-Yungera and Hattah Lakes North projects. |

| Organisation | Role | Responsibility |
|---|---|---|
| | | Prepare and implement the Construction Environmental Management Plan as required by this Framework.<br><br>Attend to reviews of the Construction Environmental Management Plan and submit revised Construction Environment Management Plan to LMW for review and endorsement for minor changes and review and comment on all other changes.<br><br>Address all comments made by LMW on proposed changes to the Construction Environment Management Plan prior to approval of the amended Construction Environment Management Plan by LMW for minor changes and prior to submission of the amended Construction Environment Management Plan to Secretary to DEECA for major changes.<br><br>When finalising detailed design and construction methods, identify, document and give reasonable consideration to opportunities to further reduce construction footprints. Implement opportunities where possible via the CEMP. Document reasons why any opportunities cannot be adopted.<br><br>Conduct internal compliance audits, receive audit reports from the Independent Environmental Auditor and take any necessary corrective action to address issues raised in audit reports.<br><br>Conduct stakeholder engagement and community consultation activities in consultation with LMW.<br><br>Engage an Environmental Manager with authority and responsibility for environmental management, as endorsed by LMW, who will:<br><br>• Be responsible for compliance and environmental management issues during the design and construction phases of the Belsar-Yungera and Hattah Lakes North projects on behalf of the Contractor(s)<br>• Review environmental audit reports and ensure issues identified are addressed. |
| Independent Environmental Auditor | Audit compliance | Prior to the commencement of relevant works, review the Contractor's environmental management documentation, Construction Environment Management Plan and other documents required by the EDSs. Verify these documents comply with this Framework, relevant EDSs, statutory approvals and approval conditions.<br><br>Conduct regular audits (every six months) of Contractor works to assess compliance with this Framework, relevant EDSs , Construction Environmental Management Plan, and any other |

| Organisation | Role | Responsibility |
|---|---|---|
| | | plans required by the EDSs, statutory approvals and approval conditions.<br><br>Prepare -audit reports (every six months) summarising the Contractor's compliance and results of audits and provide them to LMW and the Contractor(s).<br><br>Review environmental complaints as part of audits to identify any instances of non-compliance with this Framework, the EDSs, Construction Environmental Management Plan, other plans required by the EDSs, statutory approvals and approval conditions.<br><br>Undertake a close-out audit at the completion of the construction works to ensure all relevant obligations have been met prior to completion of the construction phase. |

## 8.2 Environmental management documentation (construction)

The Construction Environmental Management Plan and other construction plans, strategies and sub-plans will be developed to describe the specific processes, procedures, management and mitigation measures that will be implemented as part of the construction of the Belsar-Yungera and Hattah Lakes North projects.

These plans will be prepared either by LMW or the Contractors, and will be developed, reviewed and approved in line with the change management process outlined in the Construction Environmental Management Plan. All plans outlined in Table 10 will be required to be approved prior to the commencement of construction.

The EDSs specify the preparation and implementation of strategies, plans and sub-plans required for construction, as shown in Section 18.12. These are listed in the following table.

**Table 10: Plans required for construction of the Belsar-Yungera and Hattah Lakes North projects as specified in the EDSs**

| Plan | Prepare | Consult | Approve and/or Accept | Relevant EDS |
|---|---|---|---|---|
| Environmental Management Framework | LMW | • GMW (as it relates to the Hattah Lakes North project)<br>• MDBA (as it relates to the Hattah Lakes North project)<br>• Parks Victoria<br>• DEECA RECAFP . | Minister of Planning (or delegate) | EMF2 |
| Belsar-Yungera Cultural Heritage Management Plan (No. 16898) | LMW (prepared by R8) | • Traditional Owners and Interested Parties<br>• Mallee CMA<br>• Parks Victoria. | Secretary to DPC | ACH1 |
| Hattah Lakes North Cultural Heritage | LMW (prepared by R8) | • Traditional Owners and | Secretary to DPC | ACH1 |

| Plan | Prepare | Consult | Approve and/or Accept | Relevant EDS |
|---|---|---|---|---|
| Management Plan (No. 14330) | | Interested Parties<br>• Mallee CMA<br>• Parks Victoria. | | |
| Development Plan | LMW | • Parks Victoria | Minister of Planning (or delegate) | N/A |
| Construction Environmental Management Plan | Contractor | • Parks Victoria<br>• DEECA RECAFP and BFS<br>• EPA. | Secretary of DEECA (or delegate) | EMF2 |
| Other plans and sub-plans as required by the EDSs | Contractor | • As specified in the EDS. | Secretary of DEECA where part of the Construction Environment Management Plan and otherwise, LMW | BF1, CM1, CM2, AQ1, E2, GS2, TT2 |
| Communications and Stakeholder Engagement Plan – Construction | LMW (or delegate) | • Mildura Rural City Council<br>• Swan Hill Rural City Council<br>• Parks Victoria. | **Initial Issue and Major Revision:**<br>LMW<br>**Minor Revision:**<br>LMW | SB1 |

The construction of the projects will be required to be conducted in accordance with an EMS that is consistent with AS/NZS ISO 14001:2015 Environmental management systems - Requirements with guidance for use. EMS provide organisations with a framework and systematic approach to achieving their organisation- level objectives for environmental management and sustainability and driving continuous improvement and adaptive management.

The purpose of the EMS will be to establish a system to identify and manage environmental risks and impacts across the Belsar-Yungera and Hattah Lakes North projects and ensure comprehensive and integrated identification and management of environmental risks and issues throughout the construction of the Belsar-Yungera and Hattah Lakes North projects.

### 8.2.1 Development Plan

A development plan will be prepared for the Belsar-Yungera and Hattah Lakes North projects prior to the commencement of construction and will:

- Show details of buildings and works, the location and extent of the construction footprint, including any construction compound, extractive industry site and access tracks.
- Describe the colours, materials and finishes of the Bitterang and K10 regulators and ER1 and ER3 structures which may be illustrated by photos of similar existing infrastructure.
- Detail any staging of the development.

The development plans relate only to the construction footprint and not the areas of environmental watering.

The development plan will be prepared by LMW and for approval by the Minister for Planning (or delegate). Consultation will be required for the preparation and amendment of the development plan with:

- Parks Victoria.

The development plan will require a change management process to be included. In order to make a change to the development plan, the following will be required:

- Amended plans and a schedule explaining the proposed amendment/s.
- A written statement explaining and supporting the proposed amendment, including:

    - A description of the form and extent of any consultation undertaken with relevant councils, government agencies and other stakeholders concerning the proposed amendment
    - Any written comments from relevant councils, government agencies and other stakeholders
    - A written response to comments from relevant councils, government agencies and other stakeholders.

### 8.2.2 Construction Environmental Management Plan

The Construction Environmental Management Plan must be consistent with, and meet, as a minimum, the requirements of all relevant environmental laws, approvals, approval conditions and the EDSs.

The Construction Environmental Management Plan will set out roles and responsibilities for ongoing development and implementation of the plan, reviewing compliance before construction commences and monitoring its effectiveness during construction. It will include detailing the commitments, mitigation measures and monitoring, which will be implemented during construction.

The Construction Environmental Management Plan will also contain detailed procedures and actions for meeting the requirements of this Framework, all relevant approvals, approval conditions and the relevant EDSs for works, and include procedures for:

- Satisfying the EDSs and the requirements of approvals and approval conditions
- Assessing risk to inform management requirements for activities covered by the Construction Environmental Management Plan
- Site induction and training and the process for identifying environmental training needs based on identified competency requirements for relevant project personnel
- Emergency management and incident response training
- Monitoring, reporting and auditing compliance
- Provision of information to assist in the conduct of audit reports, including compliance reports
- Development, implementation, reviewing, updating and monitoring of site conditions and, where applicable, detail how monitoring data will be distributed to relevant agencies
- Managing environmental incidents and emergencies, which will include a framework for incident reporting, management and investigation
- Managing complaints from the community, including recording of complaints regarding environmental performance in the contractor's complaints register, investigation and close out process and reporting and escalation requirements
- A change management process for amendments to the Construction Environment Management Plan with all major amendments to be approved by the Secretary of DEECA, and minor amendments approved by LMW (refer to Section 18.10 for definitions of major and minor). All amendments requiring a change to the Construction Footprint, EMF or EDSs would need to be approved by the Minister for Planning in accordance with the Incorporated Document. Any change to the Incorporated Document would require an amendment to the relevant planning schemes.
- Management of non-conformances with the Construction Environmental Management Plan, approvals or environmental requirements, including the EDSs
- Corrective and preventative action, including a corrective and preventative action register
- Reviewing and updating the Construction Environmental Management Plan at least every six months and more frequently (as necessary) to take account of events or circumstances which may affect the way the project activities are to be carried out, including in response to an audit finding or additional approval.

In order to determine the classification of a proposed change and assess the impact of the change during the construction phase, the following process will be undertaken:

- The Contractor or VMFRP would raise a change request via the Construction Change Request and Assessment Form
- An assessment of the revision type (Administrative, Minor or Major) would be completed and agreed by both the Contractor and VMFRP and where considered Minor or Major recorded in a Construction Change Request and Assessment Form
- Assessment of the impact of the change and the subsequent outcome would be recorded in the Construction Change Request and Assessment Form and reported in accordance with Sections 18.9.3.3 and 18.10.

The Construction Environmental Management Plan will also incorporate any additional reasonable requirements of relevant approval authorities and be developed, implemented and maintained in accordance with AS/NZS ISO 14001:2015 Environmental management systems - Requirements with guidance for use.

The Construction Environmental Management Plan will provide for environmental and safety management at construction sites in conjunction with the following plans:

- Bushfire and Emergency Response Management Plan
- Traffic Management Plan
- Cultural Heritage Management Plan
- Community and Stakeholder Engagement Management Plan.

The following sub-plans and appendices will also be included as part of the Construction Environmental Management Plan:

- Environmental Emission Management Sub-plan, which will include these aspects:
    - Noise and vibration
    - Air quality
- Native Flora and Fauna Management Sub-plan which will include these aspects:
    - Terrestrial ecology
    - Aquatic ecology
    - Matters of National Environmental Significance
- Water, Soils and Waste Management Sub-plan which will include the following plans and aspects:
    - Erosion and Sediment Control Plan
    - Acid Sulfate Soil Management Plan
    - Groundwater
    - Surface water
    - Geology, soils and contamination
    - Waste
- Appendices:
    - Environmental RACI
    - Environment Policy
    - Unexpected Finds Protocol
    - Environmental Event Response Procedure
    - Obligations Register-Construction Phase
    - Site Environmental Control Plan.

The Construction Environment Management Plan sub-plans support the Construction Environment Management Plan by outlining the management of specific environmental aspects and impacts. The Construction Environment Management Plan sub-plans will contain the following:

- Scope
- Objectives
- Legislation and policy
- Obligations
- Key Risks
- Implementation
- Environmental assurance
- Environmental event management; and
- Management plan review.

The Construction Environment Management Plan will be prepared by LMW or the Contractor. The following agencies will be consulted to inform the preparation of, and in the event of a major amendment to, the Construction Environment Management Plan:

- Parks Victoria
- DEECA RECAFP and BFS
- EPA.

The Construction Environment Management Plan will require approval by the Secretary of DEECA (or delegate) prior to the commencement of construction.

## 8.3 Construction performance management

Performance management and compliance will be evaluated and reported on during the operation and construction of the Belsar-Yungera and Hattah Lakes North projects. A number of monitoring methods will be used to monitor compliance with the relevant EDS, statutory approvals and approval conditions.

### 8.3.1 Monitoring

The monitoring program contained within the Construction Environmental Management Plan will outline the procedures for monitoring, reporting and auditing compliance for the Belsar-Yungera and Hattah Lakes North projects. To support this, the monitoring requirements for the Belsar-Yungera and Hattah Lakes North projects in construction are embedded in the EDSs.

Monitoring indicators, frequency, locations and monitoring parameters will be informed by inputs such as regulatory requirements, environmental risk and expected benefits, and (to the extent contained in the Construction Environment Management Plan) will need to be prepared to the satisfaction of the Secretary of DEECA.

Compliance with the EDSs will be monitored through:

- The audit schedule outlined in Section 8.3.4
- Regular audits for compliance with the approved Construction Environmental Management Plan during construction
- Implementation of remedial action in the event any non-compliance issue is identified.

This approach will ensure that the effectiveness of the Environmental Management Framework, the EDSs and the Belsar-Yungera and Hattah Lakes North project's various environmental management plans and procedures is monitored, measured, communicated, and the subject of continuous review and improvement.

Such an approach is founded on best practice principles in performance management, ensuring that the potential for adverse effects associated with the development of the Belsar-Yungera and Hattah Lakes North projects are controlled and that beneficial environmental outcomes to be achieved by the Belsar-Yungera and Hattah Lakes North projects are supported.

### 8.3.2 Inspection

As a minimum, the Contractor will be required to complete a weekly inspection program of construction works, with more frequent inspections as required. The inspections will include CHMP compliance, sediment, drainage, watercourse, flora and fauna, dust, waste (excavated material, groundwater and other materials) and noise and vibration controls. The date and time of inspections will be recorded, and comments on any non-compliance with the Construction Environmental Management Plan and corrective or remedial action taken. Copies of inspection records will be provided to LMW, and any issues will be shared with relevant project partners.

### 8.3.3 Reporting

Monthly reports will be prepared by the Contractor and provided to LMW and will include:

- Summary of all environmental activities that has occurred onsite since the last monthly project report. This will include information such as, but not limited:
    - Any environmental controls installed onsite
    - Any dewatering activities undertaken
    - Proposed out-of-hours work
    - All environmental inspections, monitoring, auditing and reporting
    - All pre-clearance assessments and vegetation clearing (areas of Ecological Vegetation Classes (EVC) cleared)
    - Any environmental test results that been received since the last monthly project report
    - Any environmental events (non-conformances, corrective and preventative actions, administrative non-compliances and/or environment incidents)
    - Any unexpected finds identified onsite and how these were managed
    - Summary of complaints received from stakeholders and how these were managed
    - Table showing the total and monthly waste disposal material as well as receipts and material tracking information

- Any other environmental site issues.

LMW will be required to prepare a Construction Environmental Performance Report every three months. The Construction Environmental Performance Report will address:

- Outcomes of the Contractor's monthly project reports, including environmental reporting
- Updates on the following:
    - Status of current and planned works, key environmental issues and management measures
    - Advice on any proposed changes to the EDSs or the Construction Environmental Management Plan
    - Records of compliance with relevant EDSs and approval conditions and environmental legislation, policies and standards
    - Copies of applications for consents, licences and approvals and the responses from authorities
    - Details of complaints or incidents and corrective and preventative actions taken
    - Summary of any consultation with regulatory authorities or other stakeholders and communities, including a summary of key issues raised and how they have been responded to, ensuring they are captured in the approved consultation database
    - A copy of any environmental studies, monitoring results and analysis
    - A summary of contingency measures implemented to address adverse effects not permitted, predicted or anticipated
- A summary of any revisions undertaken to construction documents in accordance with the change management process
- A copy of audit reports undertaken during the reporting period and any review of the Construction Environmental Management Plan.

Copies of the Construction Environmental Performance Reports will be distributed to relevant stakeholders, including VMFRP project partners, and the Construction Environmental Performance Reports are to be provided to the Minister for Planning. Further reporting requirement details will be provided in the approved Construction Environmental Management Plan.

### 8.3.4 Auditing

LMW will appoint an Independent Environmental Auditor, which will bear primary responsibility for auditing compliance prior to and during construction. The Independent Environmental Auditor will be a person, or body of persons, who:

- has sufficient qualifications and experience to discharge its responsibilities under this EMF;
- meets the criteria specified in AS/NZS ISO 19011:2014 Guidelines for auditing management systems; and
- is independent of the project and Contractor, with no conflicts of interest and no involvement in the development of the Contractor's Environmental Management System (EMS) and EMP(s) for the works of the specific project.

Prior to commencement of works, the Independent Environmental Auditor will review the Contractor's environmental management documentation, Construction Environmental Management Plan (and all sub-plans) and other documents required by the EDSs and verify that they comply with this Framework, relevant Environmental Delivery Standards, statutory approvals and approval conditions.

The Independent Environmental Auditor will conduct audits prior to commencement of works, six monthly during construction and at the completion of the construction phase to assess compliance with this Framework (including the construction specific EDSs , the Construction Environmental Management Plan, relevant sub-plans, relevant legislation, statutory approvals and approval conditions. The audit scope will include all construction specific EDSs.

These audits will consider:

- Compliance with this Framework
- Compliance with the EDSs, mitigation measures, environmental management plans and documents
- Responses to non-conformances, incidents and complaints received
- The environmental effects caused by any non-conformances
- Application of the change management process where relevant
- Effective implementation of monitoring programs
- Previous audit outcomes
- Changes to regulations and environmental standards
- Compliance with approval conditions.

Results from the audits will be included in the environmental performance reports as outlined in Section 8.3.3.

## 8.4 Process, timing and consultation for the strategies, plans and sub-plans

The process and timing for the development of the strategies, plans and sub-plans will be in accordance with this Framework and the EDSs. This includes the process and timing for consultation with relevant persons, including statutory authorities such as councils and water authorities, as required by the EDSs.

This will ensure that plans and procedures of a technical nature directly relevant to the functions of a specific statutory authority are appropriately developed in consultation with those agencies. It will also ensure that consultation occurs in accordance with the specific requirements of the EDSs, approvals and approval conditions.

Consultation may include meetings, workshops, and exchange of documentation and correspondence with relevant persons. The extent of consultation and outcomes will be documented to demonstrate compliance with the strategies, plans and sub-plans required by the Environmental Delivery Standards.

Where an EDS is expressed as requiring or being subject to the agreement, to the satisfaction or in accordance with the requirements of a specified stakeholder, reasonable endeavours must be pursued with that stakeholder. However, if the stakeholder does not respond within a reasonable period of time that is clearly communicated at the time of consultation, the requirement will be deemed to have been satisfied.

# 9 Change management

From time to time, the Environmental Management Framework may require amendment, for example:

- Edits required to an EDS
- Changes to key project elements and activities.

Any amendments to the Environmental Management Framework must be to the satisfaction of the Minister for Planning, and (in accordance with Condition 4.5.5 of the Incorporated Document) must be accompanied by:

- A description of the form and extent of any consultation undertaken with relevant stakeholders concerning the proposed amendment/s
- Any written comments received from relevant stakeholders
- A written response to comments made by relevant stakeholders.

During the course of construction, should it be necessary to change the Construction Footprint, it must be with the approval of the Minister of Planning. The change management process for a change to the Construction Footprint is in accordance with the development plan change management process as described in Section 8.2.1.

During the course of operation, should it be necessary to change the Maximum Inundation Area, for example, due to changes in the physical landscape, an amendment of the Planning Scheme would be required and would be subject to a separate process to this EES.

Changes to infrastructure after the expiration of the construction period, as defined by the Incorporated Document, would be subject to a new approval process, if applicable.

The Construction Environmental Management Plan and the Operation Environmental Management Plan are subject to their own change management process as detailed within the relevant document and summarised in Sections 7.3.1. and 8.2.2, and the following definitions in Table 11 would need to be adopted in those change management processes:

**Table 11: Change management definitions**

| Revision Type | Definition / Criteria | Notification / Consultation / Approval / Reporting required |
|---|---|---|
| Administrative | • General changes such as updates to formatting, references and readability. | • No notification, consultation, approvals or reporting required, however version control must be applied. |

| Revision Type | Definition / Criteria | Notification / Consultation / Approval / Reporting required |
|---|---|---|
| | | • Revisions undertaken by the agency who prepared the document. |
| Minor | • Changes to clarify or improve environmental management practices, to add new obligations and associated controls or minor change of work practices. No change to Environmental Delivery Standards or increase in, or introduction of, new environmental risks.<br>• For example in construction: a change in location of infrastructure during construction that is within the Construction Footprint and will not result in a change in impact to vegetation or cultural values<br>• For example in operation: if there is a change in the responsibility for an obligation | • Consultation and approval required by relevant agency as outlined in Sections 7.3.1 and 8.2.2.<br>• Notification to DEECA prior to change being implemented.<br>• Reporting as part of construction environmental performance report or Operational Environmental Performance Report |
| Major | • Significant change to environmental management practices on site, work methods or scope that result in increased or new environmental risks or practices<br>• Changes during construction but still within the approved Construction Footprint that require an update to the approved avoid and minimise statement, in accordance with the *Guidelines for removal, destruction or lopping of native vegetation* (Department of Environment, Land, Water and Planning, 2017)<br>• For example in construction: the location of a regulator needs to shift in response to an archaeological find, and vegetation needs to be cleared that was previously identified as retained<br>• For example in operation: an obligation is deemed to be no longer necessary | • Consultation and approval required by relevant agency as outlined in Sections 7.3.1. and 8.2.2 - prior to change being implemented.<br>• Reporting as part of construction environmental performance report or Operational Environmental Performance Report<br>• Any changes to the avoid and minimise statement must be prepared to the satisfaction of the Secretary of DEECA. |

# 10 Consultation

## 10.1 Consultation prior to and during the EES process

Mallee CMA started working with key stakeholders and interested community groups to develop the concept for the Belsar-Yungera and Hattah Lakes North projects in 2010.

Informing the EES and the development of this EMF, as part of the EES the Technical a consultation plan was developed to establish the overarching principles, objectives and approach to engaging with stakeholders, Traditional Owners and Interested Parties and the community for Belsar-Yungera and Hattah Lakes North projects. It outlined the program of communication and engagement activities that were delivered as part of the EES process. It also identified opportunities for the public to provide feedback on and input into the EES process as stipulated in the Ministerial Guidelines for Assessment of Environmental Effects under the *Environment Effects Act 1978* (Vic). Extensive consultation and engagement were undertaken with Traditional Owner groups to understand and manage construction activities, as well as plans for operations and ongoing participation.

A key component of the development of this EMF was consultation with the Technical Reference Group (TRG) convened by the Victorian Government to advised on the adequacy of the EES documentation, including the EMF. The TRG, comprising government agencies, regional authorities, councils and registered Aboriginal Parties, reviewed all EES documentation twice, providing comment and confirming the appropriateness of responses. Through that

TRG process, DEECA reviewed the EMF and feedback was adopted as appropriate to ensure that the EMF was adequate.

The Belsar-Yungera and Hattah Lakes North projects communications and engagement strategy is described in the EES documentation (in particular Chapter 7 *Communications and engagement*[2] and Attachment VIII *Stakeholder and community engagement report*[3]). Attachment VIII provides further details on the consultation plan and the consultation and engagement activities – including with the TRG – undertaken for the Belsar-Yungera and Hattah Lakes North projects.

After the completion of the EES, the documentation was placed on public exhibition and the public was invited to make a submission to the Standing Inquiry and Advisory Committee (appointed by the Minister for Planning). The SIAC considered the EES and submissions and provided independent advice to the Minister for Planning. This advice and the subsequent assessment and recommendation by the Minister for Planning[4] have further informed the EMF as reflected in this standalone EMF which has been updated and finalised to address the statutory requirements of the Incorporated Document (refer Section 2)

## 10.2 Consultation on Minister's recommendations

Following the publication of the Minister for Planning's assessment, LMW consulted with a number of relevant agencies which are responsible authorities and decision makers in respect of the implementation of those EDSs. Agencies included:

- DTP – Impact Assessment Unit
- DEECA – Planning and Environmental Assessment (as point-of-contact to coordinate broader Departmental feedback)
- DCCEEW
- First Peoples – State Relations
- Parks Victoria
- Mallee Catchment Management Authority

LMW produced a series of theme-based memos outlining the proposed responses to the recommendations. Memos addressing matters that required consideration by technical personnel (e.g. Aboriginal Cultural Heritage, Biodiversity) were provided to the relevant agencies, and a further memo addressing non-technical matters (e.g. content of the EMF and minor content or re-wording for commitments) was provided to IAU to review how the Minister's recommendations have been addressed ahead of seeking approval from the Minister for Planning.

Memos were circulated to the relevant agencies on 17 September 2024 for consideration, informed by meetings and discussions with LMW during this time, and feedback which was then considered by LMW. Updated responses, including the rationale for those responses were provided back to agencies on 10 February 2025. No further feedback was received, and the outcomes of this process are reflected within this EMF.

Further consultation on the updates to this EMF (in converting Chapter 19 of the EES to a stand-alone document, and addressing the Minister for Planning's recommendations) has been undertaken with DEECA via the Planning and Environmental Assessments team.

## 10.3 Consultation during construction and operation

Consultation will continue with project stakeholders during the construction and operation of the project, principally to ensure that interested parties are aware of upcoming activities that may affect them, such as disruptions or inundation events. In this regard, key stakeholders include (but not necessarily limited to) local councils, the community and land managers.

As outlined in Section 11, several EDSs require continuous communication and engagement with relevant stakeholders (refer to EDS SB1 and SB3). Relevant stakeholders are generally defined as stakeholders with a role as the authority responsible for the requirement specified, the manager or owner of an asset or land directly affected

[2] https://media.caapp.com.au/3s529u.pdf

[3] https://media.caapp.com.au/1805xa.pdf

[4] https://www.planning.vic.gov.au/__data/assets/pdf_file/0032/664556/VMFRP_EESCentral_Ministers-Assessment.pdf

by the works or requirement, an emergency services agency or other relevant stakeholders identified. The purpose of this engagement is to enable stakeholder views, requirements, and relevant information to be considered when implementing the EDS, and to inform communities of how they may be affected by construction and operational activities. Engagement activities may include meetings, workshops, exchange of documentation and correspondence between stakeholders and LMW (including project partners) or Contractor(s). The specific activities and consultation methods to be utilised are expected to evolve over time in response to changing expectations, experience and familiarity with processes.

Where an EDS is expressed as requiring or being subject to the agreement of a stakeholder, LMW, (including project partners) and/or the Contractor(s) will use reasonable endeavours to reach agreement with that stakeholder. The extent and method of consultation will be documented and communicated to relevant stakeholders, and outcomes will be documented to demonstrate compliance with the EDS. Feedback on how matters raised by the stakeholder have been considered and, where appropriate and reasonable, addressed by LMW (including project partners) or Contractor(s) will also be shared with the relevant stakeholders.

# 11 Environmental Delivery Standards

EDSs set out the environmental management measures and standards that will apply to enable the benefits of the projects to be achieved while avoiding, minimising and appropriately managing potential impacts. The EDSs detailed in Table 12 are based on the final specialist assessments, and may be updated following the outcomes of the Public Display, Standing Advisory Committee and the Minister's Assessment.

**Table 12: EDS for the Belsar-Yungera and Hattah Lakes North projects**

| Environmental Delivery Standard | | Project phase | Responsibility |
|---|---|---|---|
| EMF1 | **Environmental Management System**<br><br>Develop, prepare and implement an Environmental Management System that is consistent with AS/NZS ISO 14001:2015 Environmental management systems – Requirements with guidance for use through the design and construction of the Projects. | Construction | Contractor |
| EMF2 | **Construction Environmental Management Plan**<br><br>Prepare and implement a project specific Construction Environmental Management Plan and other relevant sub-plans as required by the Environmental Delivery Standards and in accordance with the Environmental Management Framework. The development of the Construction Environmental Management Plan and sub-plans must include consultation with relevant stakeholders as listed in the Environmental Management Framework and as required under any statutory approvals.<br><br>The Construction Environmental Management Plan and all sub-plans shall be prepared or approved by Lower Murray Water before construction commences. The Plan and all sub-plans will be audited for compliance by the Independent Environmental Auditor. | Construction | Contractor |

| Environmental Delivery Standard | | Project phase | Responsibility |
|---|---|---|---|
| EMF3 | **Operational management**<br><br>Operate the Projects in accordance with the following documents (or equivalent) within the environmental watering framework in accordance with the Environmental Management Framework and as applicable to the relevant project:<br><br>• Operation Environmental Management Plan<br>• Environmental Water Management Plan<br>• Seasonal Watering Plan<br>• Operating Plan<br>• Operations and Maintenance Plan. | Operation | CMA (as preparer of the plans except the O&M Plan)<br><br>LMW (as preparer of the O&M Plan) |
| EMF4 | **Operation performance management**<br><br>Operation of the projects will be monitored, evaluated and reported on in accordance with:<br><br>• Operation Environmental Management Plan<br>• Ecological Monitoring, Evaluation and Reporting Plan<br>• Socio-economic Monitoring, Evaluation and Reporting Plan<br>• Environmental Watering Management Plans<br><br>Annual Operational Environmental Performance Reports will be prepared to report on performance against the EDSs and other operational obligations.<br><br>As part of this process the Plans will address the management of, and access to, baseline and monitoring data.<br><br>Implement a process to ensure that the outcomes of the monitoring, evaluation and reporting inform adaptive management of environmental watering events as per the Environmental Watering Management Plans. | Operation | CMA (as preparer of the plans) |

| Environmental Delivery Standard | | Project phase | Responsibility |
|---|---|---|---|
| ACH1 | **Cultural Heritage Management Plan**<br><br>Comply with the Cultural Heritage Management Plans (No. 16898 and No. 14330) approved by First Peoples – State Relations for the Belsar-Yungera and Hattah Lakes North projects under the *Aboriginal Heritage Act 2006*. | Design, operation and construction | LMW  Contractor |
| ACH2 | **Connection to Country**<br><br>Integrate Aboriginal knowledge, values, and aspirations into the planning, delivery and evaluation of the Belsar-Yungera and Hattah Lakes North projects.<br><br>Create opportunities for enhancing and sharing cultural connection to Country. | Design, operation and construction | CMA<br><br>Parks Victoria |
| ACH3 | **Cultural Heritage Management - Operation**<br><br>Operate the projects in accordance with the existing Victorian environmental watering management framework, including via Environmental Watering Management Plans, Seasonal Watering Proposals and/or Delivery Plans (or equivalent), to:<br><br>• Undertake a risk-based approach to identify, avoid and minimise risks (where practicable) to cultural heritage in (and immedietely adjacent to) the Maximum Inundation Area in consultation with Registered Aboriginal Parties/Traditional Owners and interested parties (as applicable), and<br>• In accordance with that framework, before watering develop measures to avoid, mitigate, minimise or manage risks (e.g. protection measures). All measures are to be commensurate with the level of risk and must be developed in consultation with Registered Aboriginal Parties/Traditional Owners and interested parties (as applicable).<br><br>If culturally sensitive locations are observed or reported to be at risk from pest or overabundant native species or human activity (i.e. visitation), conduct monitoring at these locations to determine the potential for impact, and as a first priority, implement protective measures, and secondary to this, implement remedial measures, where necessary. These actions are to be commensurate with the level of | Operation | CMA |

| Environmental Delivery Standard | | Project phase | Responsibility |
|---|---|---|---|
| | risk and determined and agreed between the land manager and Registered Aboriginal Parties/Traditional Owners and interested parties (as applicable). | | |
| ACH4 | **Aboriginal Cultural Heritage Inundation Assessment**<br><br>Prior to operation, update the assessment of residual effects associated with managed inundation (if required), based on the outcomes of the further hydraulic analysis required by EDS SW4. To the extent practicable, this should have particular regard to the potential for indirect impacts associated with erosion and sedimentation as well as increased water availability and fluctuations in moisture content. Any updates to the assessment will inform management of Aboriginal Cultural Heritage in accordance with EDS ACH3. | Construction | LMW |
| AG1 | **Avoid and minimise impacts on agricultural productivity**<br><br>The Construction Environmental Management Plan must include measures to manage:<br><br>• biosecurity risks in accordance with the *Catchment and Land Protection Act 1994* and Best practice viticulture biosecurity (Victoria Agriculture, 2021). Specific measures to be agreed with the landholder and/or land manager<br>• access disruptions to private land and infrastructure in accordance with EDS TT2. | Construction | Contractor |
| AG2 | **Operational agricultural impacts**<br><br>Any potential impacts on private land including agricultural land during operation will be managed in accordance with the easements or other agreements as detailed in EDS LU2. The Operations and Maintenance Plan will inform day-to-day operation and detail operating control limits, action triggers and associated response procedures for watering events. | Operation | LMW (as preparer of O&M Plan and Property Management Plan)<br><br>CMA (as preparer of Operating Plan) |
| AQ1 | **Construction air quality management: dust**<br><br>The Construction Environmental Management Plan must include an Environmental Emission Management Sub-plan with processes and measures to avoid and, where avoidance is not practicable, minimise emissions to air in accordance with the | Construction | Contractor |

| Environmental Delivery Standard | | Project phase | Responsibility |
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| | requirements of the *Environment Protection Act 2017*, subordinate legislation and other relevant statutory requirements and guidelines. Measures to include:<br><br>• A process for confirming all sensitive receptors within 350 metres of active construction sites<br>• Apply dust suppression on unsealed roads/tracks and areas to the extent practicable for reducing impacts within 350m of stationary human sensitive receptors<br>• Vehicle loads on public roads to be covered when carrying dust (or litter) generating material<br>• Setting speed limits for construction vehicles (in accordance with the Traffic Management Plan required by EDS TT2) to reduce dust as far as practicable<br>• Dust suppression activities must consider weather patterns, ground cover, ground conditions e.g. type and moisture content of soil present, and type of activities being conducted as well as proximity to sensitive receptor locations<br>• Manage stockpile areas to minimise dust (eg, through compaction, lining, covering, wetting or use of a binding agent)<br>• Environment inspections as detailed in the Construction Environmental Management Plan to include dust observations, record inspection results<br>• Contractors will be required to refer to and utilise the following three documents and implement measures where appropriate during the construction phase of the project in accordance with the following publications:<br><br>- Managing stockpiles (EPA Publication 1895)<br>- Managing soil disturbance (EPA Publication 1894)<br>- Managing truck and other vehicle movement (EPA Publication 1897)<br><br>• Undertake reactive continuous/realtime dust monitoring (as defined in Guideline for assessing and minimising air pollution in Victoria (EPA Publication 1961) where construction and/or haulage on unsealed roads occurs within 20m of occupied residences.<br><br>Reactive dust monitoring is required at these locations only while construction and/or haulage is being undertaken (i.e. not required outside of working hours). If fine dust particles are measured to exceed PM10 of 100 ug/m3 for a 15 minute average and/or the trigger level identified in Guideline for assessing and minimising air pollution in Victoria (EPA Publication 1961) and following an investigation which | | |

| Environmental Delivery Standard | | Project phase | Responsibility |
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| | determines that the dust is attributed to the project construction, then the contractor must temporarily modify or suspend dust generating activities until controls are put in place to avoid and reduce dust. | | |
| AQ2 | **Dust nuisance and complaints**<br><br>The Community and Stakeholder Engagement Management Plan required by EDS SB1 must detail a process to receive and respond to queries or complaints relating to dust. This must include a project specific hotline to receive queries or complaints and a process for investigating and responding as required. Measures to address the complaint must be implemented as soon as practicable. | Construction | Contractor |
| AQ3 | **Pumping equipment**<br><br>All pumping infrastructure involving diesel plant to be serviced within appropriate servicing frequencies and maintained to manufacturer specifications (where available). | Operation | LMW (as preparer of O&M plan)<br><br>CMA (as preparer of Operating plan) |
| BF1 | **Bushfire management during operation**<br><br>Activities associated with the operation and maintenance of project infrastructure with relevance to bushfire ignition, preparedness and management must be undertaken in accordance with existing relevant processes (such as the Joint Fuel Management Program including cultural burning), procedures and requirements of the relevant land manager and relevant emergency management authorities. Prior to the commencement of operation:<br><br>• Prepare a pre work assessment (for example a Job Safety Analysis) to incorporate fire ignition risk assessment and controls for any operation and maintenance activities.<br>• Prepare Emergency Response Plans (or equivalent) in consultation and agreement with the relevant land manager and relevant emergency management authorities. The Emergency Response Plans must include maps with key access/egress roads, alternative routes and key visitation sites for each proposed watering scenario. | Operation | LMW (as preparer of the O&M Plan)<br><br>CMAs (as preparer of OEMP and Operating Plan)<br><br>Parks Vic (as land manager) |

| | Environmental Delivery Standard | Project phase | Responsibility |
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| | Before a watering event notify land owners and managers, emergency management agencies and DEECA Forest Fire Management Victoria of the timing and type of event (confirm the watering scenario) regarding any changes to access/egress. | | |
| CM1a | **Contaminated land duties**<br><br>The Construction Environmental Management Plan must include processes and procedures to manage contaminated land, spoil and waste in accordance with land manager processes, procedures and requirements and the requirements of the *Environment Protection Act 2017*, the Environment Protection Regulations 2021, and the following EPA publications as appropriate:<br><br>• EPA Victoria, 2020, Publication 2008 Notifiable contamination guideline – Duty to notify contaminated land<br>• EPA Victoria, 2021, Publication 1827.2 Waste classification assessment protocol<br>• EPA Victoria, 2021, Publication 1828.2 Waste disposal categories – characteristics and thresholds<br>• EPA Victoria, 2021, Publication 1799.2 Permissions scheme policy<br>• EPA Victoria, 2022, Publication 1977: Assessing and controlling contaminated land risks: A guide to meeting the duty to manage for those in management or control of land<br>• WorkSafe Victoria, 2010, Asbestos Contaminated Soil Guidance Note<br>• Australian Standard AS1940 Storage Handling of Flammable and Combustible Liquids<br>• EPA Victoria publications 1834 Civil construction, building and demolition guide and 1698: Liquid storage and handling guidelines.<br><br>Specifically, the Construction Environmental Management Plan must include:<br><br>• A framework for managing contamination risks to achieve compliance with the contaminated land duties, including the General Environmental Duty, duty to manage contaminated land and duty to notify the EPA of contamination.<br>• A framework for monitoring baseline and post-construction conditions to measure compliance with the duties and assess whether contamination has occurred as a result of the project<br>• A framework for managing waste to achieve compliance with the Duties and regulatory requirements including classification, transportation and disposal at a | Construction | Contractor |

| | Environmental Delivery Standard | Project phase | Responsibility |
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| | lawful place. This will include minimisation of waste generation and implementation of the waste hierarchy<br>• Management measures for storage, handling and transport of materials for the protection of human health and the environment, including controls for minimising dust generation, sediment and stormwater run-off and seepage from stockpiled materials<br>• Management measures to minimise chemical and fuel storage (including hazardous materials and dangerous goods) in accordance with EPA and Safe Work Australia requirements in the legislation and guidelines listed above. This must include:<br>- Creating and maintaining a dangerous goods register<br>- Disposing of any hazardous materials, including asbestos, in accordance with the Environmental Protection Regulations 2021 and relevant guidelines<br>- Implementing requirements for the installation of bunds and precautions to reduce the risk of spills<br>- Contingency and emergency response procedures to handle fuel and chemical spills, including availability of on-site hydrocarbon spill kits.<br>An unexpected finds protocol including procedures if building rubble/asbestos in fly-tipped waste, buried waste or previously unidentified contamination is encountered. This must include measures to identify asbestos and (if present) manage this soil in accordance with the WHS Act and Regulations and Safe Work Australia. | | |
| CM1b | **Water, Soils and Waste Management Sub-plan**<br>A Water, Soils and Waste Management plan must be prepared as a sub-plan to the Construction Environmental Management Plan to:<br>• Comply with the General Environmental Duty as per the *Environment Protection Act 2017*<br>• Identify spoil management options and / or off-site disposal in accordance with regulatory requirements including details of reuse options for all categories of spoil expected to be generated through construction<br>• Identify procedures and requirements for characterisation, management and reuse of soil to be imported and/or re-used in construction. Classification and relevant permits will be sought and obtained in accordance with the | Construction | Contractor |

| Environmental Delivery Standard | | Project phase | Responsibility |
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| | Environmental Protection Regulations 2021 and supporting EPA guidelines. Characterisation will also consider the National Environment Protection Measures (Assessment of Site Contamination) 2013 to confirm the material is suitable for the proposed end use (to be determined based on the identified re-use location). This will include:<br>• Preparation of a sample analysis and quality plan and conceptual site models<br>• Details of management measures to be implemented for sustainable handling and transport of spoil for the protection of human health and the environment<br>• Details of design and specific environmental management plans for temporary stockpile areas and stockpile activities including but not limited to containment of stockpiled materials to prevent any impact to human health or the environment (if required)<br>• Classify material for disposal and identification of a suitable receiving facility (dependant on the classification) in accordance with EPA Victoria requirements to classify spoil for disposal or re-use as required<br>• Provide a framework for material and waste tracking<br>• Apply the waste hierarchy, including avoidance as far as reasonably practicable, prioritise beneficial re-use of material as part of the project and avoid off-site disposal to landfill as far as reasonably practicable. | | |
| CM1c | **Soil characterisation**<br><br>Prior to construction activities commencing at a discrete location, the contractor must characterise the condition of the land by applying a risk based approach to understand the nature and extent of any potential (existing) contamination at the following locations:<br><br>• Lay down areas and compounds<br>• Other areas where soil or materials will be handled, or chemicals will be stored / used<br><br>This characterisation will include:<br><br>• Review of desktop information (including the EES Central Geology, Soils and Contamination Specialist Assessment and any further information provided from land managers, through the design process and other information that may have changed (e.g. publicly available information such as from EPA Victoria) | Construction | Contractor |

| Environmental Delivery Standard | | Project phase | Responsibility |
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| | • Site walkover across the locations identified above, with a particular focus on visual or olfactory signs of contamination such as staining, spills, dumped waste or stockpiles of soil<br>• Depending on the outcomes of the tasks above, targeted soil sampling at locations identified as having potential to contain contaminated material.<br><br>The outcomes of this characterisation will inform construction control measures, inform the re-use of soil, and/or to classify material in accordance with EPA waste guidelines.<br><br>Soil will be managed in accordance with the Water, Soils and Waste Management Sub-plan as per EDS CM1b. | | |
| CM2 | **Acid sulfate soils**<br><br>The Construction Environmental Management Plan must include an Acid sulfate soil management plan (ASMP). The ASMP must be prepared in accordance with the following where relevant:<br><br>• National Guidance for the Management of Acid Sulfate Soils in Inland Aquatic Ecosystems<br>• Guidance for the dewatering of acid sulfate soils in shallow groundwater environments<br>• *Environment Protection Act 2017* General environmental duty<br>• Environment Protection Regulations 2021<br>• National Acid Sulphate Soils Guidance - A synthesis<br>• National acid sulphate soils sampling and identification methods manual<br>• Guidelines for the dredging of acid sulphate soil sediments and associated dredge spoil management<br>• Land manager policies and requirements.<br><br>The ASMP must include measures to:<br><br>• Characterise and manage acid sulfate soils in accordance with:<br><br>- EPA Victoria, 2009, Publication 655.1 Acid Sulfate Soil and Rock | Construction | Contractor |

| Environmental Delivery Standard | | Project phase | Responsibility |
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| | - Murray Darling Basin Authority, 2010, Detailed Assessment of Acid Sulfate Soils in the Murray-Darling Basin<br><br>• Manage stockpile areas to prevent release of acid to the environment<br>• Identify suitable sites for management, re-use or disposal of acid sulfate soil and rock in accordance with EPA Victoria requirements.<br><br>As far as reasonably practicable, prevent oxidation that could lead to acid formation through cover and/or scheduling practices or addition of neutralising compounds to avoid acid formation. | | |
| CM3 | **Contaminated land duties**<br><br>The Operation Environmental Management Plan must include processes and procedures to manage contaminated land, spoil and waste in accordance with land manager processes, procedures and requirements, and the requirements of the legislation and other relevant statutory regulations and guidelines as detailed in EDS CM1a. Specifically, the Operation Environmental Management Plan must include:<br><br>• Reference to a framework(s) for managing contamination risks to achieve compliance with the contaminated land duties, including the General Environmental Duty, duty to manage contamination and duty to notify the EPA of contamination<br>• Management measures for storage, handling and transport of soil, water and/or waste materials for the protection of human health and the environment, including measures for minimising dust generation, sediment and stormwater run-off. Soil and/or water monitoring and reporting would be undertaken to ensure effective implementation of the management measures and ongoing environmental compliance of the project infrastructure/operational activities. Controls must include:<br><br>- Measures to minimise chemical and fuel storage on site and store hazardous materials and dangerous goods in accordance with EPA and Safe Work Australia requirements in the legislation and guidelines listed in EDS CM1a. This must include:<br><br>› Creating and maintaining a dangerous goods register | Operation | Mallee CMA<br>LMW<br>Parks Victoria |

| | Environmental Delivery Standard | Project phase | Responsibility |
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| | › Disposing of any hazardous materials, including asbestos, in accordance with the Environmental Protection Regulations 2021 and relevant guidelines<br>› Implementing requirements for the installation of bunds and precautions to reduce the risk of spills<br>› Contingency and emergency response procedures to handle fuel and chemical spills, including availability of on-site hydrocarbon spill kits. | | |
| E1 | **Native vegetation and habitat design minimisation**<br><br>Avoid and, where avoidance is not practicable, minimise native vegetation removal and ensure that the removal of native vegetation will not exceed 50.30 ha for the Belsar-Yungera project and 18.90 ha for the Hattah Lakes North project.<br><br>The following measures to avoid and minimise impacts to native vegetation (including habitat fragmentation) are to be implemented as part of detailed design and construction planning phases including:<br><br>• Undertake further investigation of identified alternatives where there may be opportunity to further avoid and minimise adverse effects to native vegetation through detailed design and construction methods (as identified in Attachment VII to the EES).<br>• Minimise footprint and surface disturbance of temporary and permanent works within the Construction Footprint as far as reasonably practicable, particularly near waterways, wetlands, endangered EVCs and fauna habitats (eg native and exotic vegetation, hollows, logs, soil and water). This includes movement and storage of all vehicles, machinery, equipment and materials<br>• Avoid and/or minimise the removal of native vegetation including Large and/or hollow-bearing trees, threatened species and threatened communities as far as reasonably practicable, particularly in the design phase when finalising the Construction Footprint (e.g. looking at alternative locations for turning circles and laydown areas that avoid impacts to any large trees, refining track class and alignment to avoid and minimise impacts to threatened species and Large or Very Large Trees).<br><br>Design and implement no-go zones to protect ecological values, and provide detailed maps of their location in the Construction Environmental Management | Design and construction | Contractor |

| Environmental Delivery Standard | | Project phase | Responsibility |
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| | Plan. No-go zone fencing (bunting/barriers considerate of culturally sensitive areas) to be installed around significant ecological values to be retained, including populations of EPBC Act-listed flora within the Area of Investigation, FFG Act listed flora and Large or Very Large Trees on the edge of the Construction Footprint that are proposed to be retained during construction). | | |
| E2a | **Construction biodiversity administrative processes**<br><br>Develop and implement a Native Flora and Fauna Management Sub-Plan as a sub-plan of the Construction Environmental Management Plan (EDS EMF2). The Native Flora and Fauna Management Sub-Plan must include auditable specific commitments, and identify requirements and methods for avoiding and minimising impacts on biodiversity values, particularly native vegetation and threatened species and communities, including:<br><br>• the matters required by EDS E2b, E2c, E2d, E2e, E2f, E2g and E2h;<br>• Contractor inductions to be undertaken so that all staff onsite are aware of the ecological values (and other values) to be protected during construction<br>• Monitoring and auditing requirements for implementation by the environmental supervisor to confirm works are proceeding in accordance with the Native Flora and Fauna Management Sub-plan (e.g. checking that works are occurring in approved areas, no-go zone delineation is accurately in place, pre-clearance surveys are proceeding appropriately)<br>• If EPBC Act or FFG Act listed threatened species (individuals or population) are encountered which were not assessed within the EES assessment:<br><br>- Stop works at that location and implement appropriate measures (e.g. temporary fencing will be installed), pending discussions with DCCEEW/DEECA as relevant<br>- Notify a suitably qualified ecologist to determine the significance of any potential impacts<br>- Seek any relevant approvals from the relevant authority if removal/impacts cannot be avoided.<br><br>Should works be required outside the approved Construction Footprint, follow the change process as detailed in the Construction Environmental Management Plan | Construction | Contractor |

| Environmental Delivery Standard | | Project phase | Responsibility |
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| | which includes consideration of biodiversity (e.g. native vegetation, threatened species) implications, including approval requirements, re-quantification of impacts. | | |
| E2b | **Construction vegetation management**<br><br>The Native Flora and Fauna Management Sub-Plan must include the following requirements for vegetation removal activities:<br><br>• Clearly identify the trees to be removed. Trees that may be or are to be retained, must not be marked in any way<br>• Delineate no-go zones incorporating Tree Protection Zones of Large Trees and threatened flora species populations to be retained to prevent access during construction<br>• Tree protection measures to be implemented to respond to arborist recommendations (e.g. tree protection zone fencing, mats) where appropriate<br>• Minimise removal of vegetation approved for removal/impacts (eg. reducing the number of trees felled)<br>• Once the construction footprint and construction methods are finalised in areas not previously assessed by an arborist during the design phase, undertake a detailed arborist assessment for Large Trees that will be impacted by more than 10% of their Tree Protection Zone (TPZ) to document the tree condition and significance, tree protection zone, structural root zone, tree protection fencing or ground protection systems to be used, and determine if the tree can be retained. The arborist is required to have a minimum qualification of Diploma in Arboriculture (AQF level 5 or equivalent) and tree impacts are to be assessed in accordance with the Australian Standard 4970- 2009 Protection of Trees on Development Sites. For trees to be retained implement tree and vegetation protection measures outlined in this EDS<br>• Pruning of trees to be retained will be undertaken to the minimum extent necessary and must not exceed one third of total canopy area. Pruning to be undertaken in accordance with AS4373 Pruning of Amenity Trees<br>• Vegetation clearing, pruning and excavation controls and protection measures, including the following protocols:<br><br>- pre-clearing surveys by an authorised and experienced wildlife handler of all accessible fauna habitat up to 5 days prior to clearing, as well as identified obscured fauna habitat (e.g. hollows, nests, logs, inaccessible habitat) up to | Construction | Contractor |

| Environmental Delivery Standard | | Project phase | Responsibility |
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| | 24 hours prior to clearing. These can be conducted together as one pre-clearing survey provided it occurs no more than 24 hours prior to clearing<br>- fauna salvage by an authorised and experienced wildlife handler that is to be onsite during all vegetation removal/felling/lopping activities.<br>- two-stage clearing and phased/staged removal to retain trees for as long as possible wherever practicable<br>- minimised clearing during spring where practicable. | | |
| E2c | **Construction fauna management**<br><br>The Native Flora and Fauna Management Sub-Plan must include the following requirements for terrestrial and aquatic fauna management during construction:<br><br>• Development and implementation of handling and salvage protocols for terrestrial and aquatic fauna during construction, including legislative permit and authorisation requirements of wildlife handlers (e.g. a Management Authorisation under the *Wildlife Act 1975*). This will include guidance for appropriate methods to encourage wildlife to leave vegetation and the construction areas, and other procedures should fauna (including juveniles or eggs) be found within hollows or nests during the pre-clearance surveys. The protocols will include details of requirements, including wildlife handler/ecologist/Victorian Fisheries Authority permit and authorisation requirements and EPBC Act post-referral approvals processes<br>• All fencing must be fauna friendly to minimise risk of wildlife injury from collision and include provision of egress points, for example:<br><br>- Temporary to exclude construction: High visibility string of bunting or plastic mesh (not transparent) attached to star pickets with plastic caps (or weighted posts that avoid ground penetration in culturally sensitive areas)<br>- Temporary to exclude wildlife (e.g. from open trenches): Chain wire fencing >1.8m high with a top rail or tension wire. Fencing stays located inside the exclusion area, or with high visibility mesh to guide wildlife away from obstructions. Shade cloth or other suitable deterrent attached to the lower 50 cm of the outside of the exclusion zone and weighted to the ground to exclude smaller animals<br>- No barbed or razor wire will be used | Construction | Contractor |

| | Environmental Delivery Standard | Project phase | Responsibility |
|---|---|---|---|
| | • Trench management, including avoiding open trenches overnight where practicable. Where trenches cannot be closed, check trenches at the start and end of each day (i.e. dawn/dusk), and consider feasibility of measures (e.g. ramps) to aid animal escape<br>• Implement measures to minimise noise, vibration and lighting impacts on known threatened fauna species and habitat, including:<br>- Avoid unnecessary light spill across a broader area than required to avoid attracting insects and subsequently their predators (bats and birds)). EDS LV3 provides additional requirements in relation to lighting during construction<br>- Avoiding night works during periods of high insect/bird/bat activity (October to March) as far as reasonably practical, so as to minimise disturbance to fauna communication, foraging and other behaviours that depend on sound and darkness<br>- Avoiding pile driving in waterways at night as far as reasonably practical. If pile driving in waterways must occur over multiple nights, consecutive days are to be separated with a night of no works in between to minimise ongoing chronic disturbance to wildlife. | | |
| E2d | **Construction weed and pest management**<br><br>The Native Flora and Fauna Management Sub-Plan must include the following requirements and measures to mitigate weed and pathogen introduction and spread:<br><br>• Vehicle, personnel, material and equipment hygiene protocols (including measures required to prevent the spread or transmission of Chytrid Fungus as per *Hygiene protocols for the control of diseases in Australian frogs* (Murray et al. (2011))<br>• Weed, pest animal and pathogen management and monitoring and reporting requirements.<br><br>These measures must be auditable and linked to management outcomes such as:<br><br>• Identify CaLP Act listed weeds in the construction area and assess the risk of additional spread prior to relocating topsoil. Implement measures to manage this risk during clear and grade, and reinstatement | Construction | Contractor |

| Environmental Delivery Standard | | Project phase | Responsibility |
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| | • To a reasonable extent practicable during the clear and grade phase, ensure that vehicles and plant are free of soil (dust/clods) and vegetation prior to entry and exit from the construction area<br>• Evaluate disturbed areas post-construction and implement rehabilitation in accordance with EDS E2e.<br><br>To avoid and minimise spread of pathogens, all vehicles and plant undertaking construction works directly in the watercourse must be cleaned and free of soil prior to entrance of each waterway and on exit if working between multiple waterways (excluding vehicles and plant using the constructed access route). | | |
| E2e | **Construction rehabilitation management**<br><br>The Native Flora and Fauna Management Plan must include the following requirements for rehabilitation following construction:<br><br>• Where possible and appropriate, reuse timber and logs from felled trees on site with habitat improvement uses prioritised<br>• Replace large woody debris (existing logs and snags) removed during construction from waterbodies or the floodplain as close as practicable to where it was initially located, in consultation with land managers<br>• The projects must include rehabilitation of all affected areas following construction within the timeframe specified by the land manager:<br><br>- Rehabilitation for all areas except Borrow sites must be detailed in the CEMP and must be developed in consultation with the relevant land manager. Rehabilitation should include as appropriate topsoil, leaf litter, log reinstatement and targeted revegetation (using indigenous species in areas of native vegetation pre-construction or soil stabilising non-invasive species in other areas), as agreed with the land manager<br>- Borrow sites rehabilitation works are to be addressed in Property Management Plans, developed in agreement with the relevant land owner<br><br>Rehabilitation should include as appropriate topsoil, leaf litter, log reinstatement and targeted revegetation as agreed with the land manager. | Construction | Contractor |

| Environmental Delivery Standard | | Project phase | Responsibility |
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| E2f | **Aquatic fauna management**<br><br>In addition to the handling and salvage protocols for aquatic fauna as detailed in EDS E2c implement the following:<br><br>• Where works in waterbodies require coffer-damming that completely blocks the waterway:<br><br>- Where practical, undertake works under no-flow conditions or outside the periods of time when fish migration occurs<br>- Clearance of coffer dams during the de-watering process and following flood events which over-top the coffer dam<br>- If clearance is not possible (e.g. for safety reasons), screens/filters to be placed on temporary pumps to be used to dewater coffer dam to avoid entrainment<br>- Implement flow-through via pumping from upstream to downstream to maintain water quality and levels on both sides of the coffer dam<br>- Monitor water quality (specifically dissolved oxygen) and depths upstream and downstream of the coffer dam during construction period to maintain similar conditions on both sides of the construction site<br><br>Minimise the duration of fish passage restrictions during works undertaken in or within the vicinity of any waterbodies to reduce impacts on aquatic fauna movements and water quality. | Construction | Contractor |
| E2g | **Site specific additional measures – Regent Parrot**<br><br>• Implement measures to avoid and minimise impacts on Regent Parrot including (unless otherwise agreed with DCCEEW and DEECA):<br><br>- Removal/lopping/felling of active nesting trees, if required, must be done outside the breeding season<br>- Where possible, schedule construction activities to avoid active construction within 350m of active nesting trees during the breeding season (spring/early summer). Active construction includes construction activities associated with track upgrades and new track construction, but does not include | Construction | Contractor |

| Environmental Delivery Standard | | Project phase | Responsibility |
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| | construction vehicle transit, where vehicles are simply using tracks for access to construction sites or routine track maintenance<br><br>• Where construction occurs within 350 metres of an active nesting tree during the Regent Parrot breeding season (August to December inclusive), undertake monitoring in accordance with the Native Flora and Fauna Management Sub-Plan.<br>• Active nesting trees are to be determined with reference to potential nesting locations identified in regent parrot habitat maps in Appendix I to Specialist B of the EES. | | |
| E2h | **Site specific additional measures (Hattah Lakes North) – Mildura Ogyris Butterfly**<br><br>Where practicable, schedule construction traffic to avoid the use of Mournpall Track during active flying times for the Mildura Ogyris Butterfly (*Ogyris subterrestris)* (October and January). Where this is not practical, apply appropriate speed limits on Mournpall Track. | Construction | LMW |
| E3a | **Pest Plant and Animal Monitoring and Management Plan - Terrestrial**<br><br>Prepare (prior to the commencement of operation) and implement a Pest Plant and Animal Monitoring and Management Plan to detect and manage terrestrial pest presence and activity due to managed environmental watering events. The Plan may be prepared for multiple VMFRP projects, and will include:<br><br>• A monitoring program to indicate pest presence and activity, which will inform adaptive management and treatment measures<br>• Thresholds for implementation of contingency management measures<br>• Contingency measures, which may refer to existing policies, practices and procedures.<br><br>The monitoring program must include monitoring objectives, indicators and requirements (e.g. parameters, locations, frequency) appropriate to identify the exceedance of thresholds for pest presence and activity. Locations must include culturally sensitive locations relevant to EDS ACH3. | Operation | Parks Victoria |

| Environmental Delivery Standard | | Project phase | Responsibility |
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| | The Pest Plant and Animal Monitoring and Management Plan should include measures to assist private landowners with the increased risk of pest presence and activity due to managed environmental watering events. Measures should include raising awareness to inform landowner monitoring and reporting, appropriate measures to manage any pest presence or activity, providing support to implement measures by coordinating efforts. | | |
| E3b | **Pest Plant and Animal Monitoring and Management Plan - Aquatic**<br><br>Prepare (prior to the commencement of operation) and implement a Pest Plant and Animal Monitoring and Management Plan to detect and aquatic pest presence and activity due to managed environmental watering events, including carp. The Plan may be prepared for multiple VMFRP projects, and will include:<br><br>• A monitoring program to indicate pest presence and activity, which will inform adaptive management and treatment measures<br>• Thresholds for implementation of contingency management measures<br>• Contingency measures, which may refer to existing policies, practices and procedures.<br><br>The monitoring program must include monitoring objectives, indicators and requirements (e.g. parameters, locations, frequency) appropriate to identify the exceedance of thresholds for pest presence and activity. Locations must include culturally sensitive locations relevant to EDS ACH3. | Operation | CMA |
| E3c | **Carp Monitoring and Management**<br>Monitor and manage Carp in accordance with Mallee CMAs contribution to the implementation of the Australian Government's National Carp Control Plan (Sep 2022) (or successor). | Operation | CMA |
| E4a | **Overall biodiversity improvement – Belsar- Yungera**<br><br>Operate the Belsar-Yungera project to better align the frequency, duration and timing of managed inundation events with the ecological needs of the floodplain, | Operation | CMA (as preparer of the MER) |

| Environmental Delivery Standard | | Project phase | Responsibility |
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| | including to improve ecosystem function, threatened species' habitat, and native vegetation.<br><br>Operation of the projects, including the monitoring and reporting of outcomes, is to be undertaken in accordance with the principles of adaptive management through the following documents (or successors, as applicable):<br><br>• Operation Environmental Management Plan<br>• Environmental Water Management Plan<br>• Seasonal Watering Proposal<br>• Operating Plan<br>• Operations and Maintenance Plan<br>• Monitoring, Evaluation and Reporting Plan. | | |
| E4b | **Overall biodiversity improvement – Hattah Lakes North**<br><br>Operate the Hattah Lakes North project to better align the frequency, duration and timing of managed inundation events with the ecological needs of the floodplain, including to improve ecosystem function, threatened species' habitat and native vegetation.<br><br>Operation of the projects, including the monitoring and reporting of outcomes, is to be undertaken in accordance with the principles of adaptive management through the following documents (or successors, as applicable):<br><br>• Operation Environmental Management Plan<br>• Environmental Water Management Plan<br>• Seasonal Watering Proposal<br>• Operating Plan<br>• Operations and Maintenance Plan<br>• Monitoring, Evaluation and Reporting Plan. | Operation | CMA (as preparer of the MER) |
| E5 | **Mildura Ogyris Butterfly - Hattah Lakes North**<br>For the Hattah Lakes North project, undertake monitoring within areas subject to managed inundation plus a 100m buffer (subject to landowner/manager consent) to assess effects of the 2022 flood event and proposed environmental watering on the | Pre-construction/ Construction | CMA |

| Environmental Delivery Standard | | Project phase | Responsibility |
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| | butterfly (including species it is dependent on). Outcomes are to be used to inform the adaptive management of project operations.<br><br>Liaise directly with the relevant owners and managers of land to be inundated prior to undertaking monitoring. | | |
| E6 | **Water regimes to inform initial operations**<br>For Hattah Lakes North, prior to operation, undertake a Hydrological Analysis of Ecological Vegetation Classes.<br><br>For both Projects' areas, use the site-specific hydrological analyses of Ecological Vegetation Classes (including the analysis recommended for Hattah Lakes North above and *Hydrological analysis of ecological vegetation classes in relation to expert elicitation report – Belsar Yungera floodplain* (2023, Ecological Associates) together with *A Guide to water regime, salinity ranges and bioregional conservation status of Victorian wetland Ecological Vegetation Classes* (2016, Frood and Papas)) and the expert elicitation report (*Expert elicitation of tolerable and optimal watering regimes for Murray River floodplain vegetation*, 2022 ARI), to review and (if necessary) update initial operating scenarios and adaptive management to be tested through environmental monitoring of response of vegetation to watering events. | Design | LMW |
| E7 | **Post-2022 floods targeted surveys**<br>Prior to the initial managed inundation of the following locations, undertake a targeted survey for the corresponding species:<br><br>• previously recorded locations for Umbrella wattle, Club-hair new holland daisy and Frosted goosefoot in the inundation areas (and incidental observations of Winged Peppercress must also be recorded)<br>• within the inundation area on the Raakajlim property (if it is to be inundated), for Winged Peppercress<br><br>Liaise directly with the relevant landowners and land managers of land to be inundated prior to undertaking the surveys and post survey to discuss mitigation measures if the species are located. | Construction | LMW |

| Environmental Delivery Standard | | Project phase | Responsibility |
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| E8 | **Hollow replacement**<br>Develop and implement a hollow replacement plan to offset the removal of hollow-bearing trees. The plan is to be prepared to the satisfaction of the DEECA Regional Director (Loddon Mallee Region) and:<br>• nominate priority hollow-dependent fauna species on the basis of suitable evidence of their habitat requirements within the impacted project area<br>• require the number and type of artificial hollows to be installed to be commensurate with the number and type of utilised hollows estimated to be removed, as determined by a qualified zoologist, based on available scientific knowledge; and<br>• require supplementary nesting sites/artificial hollows to be installed in adjacent areas prior to the removal of large hollow-bearing trees;<br>• be implemented progressively over a ten-year period with appropriate monitoring to ensure its cost-effectiveness<br><br>The plan must give careful consideration of designs and/or type of hollows to appropriately accommodate the nominated range of hollow dependent fauna and ensure appropriate insulation against temperature extremes. The agreed location and specification of artificial hollows to be incorporated into site maps and as a Project GIS layer prior to the commencement of works. | Pre-construction, Construction, Operations | LMW (during pre-construction and construction)<br><br>CMA (during operation) |
| E9 | **Native fish standing**<br><br>Develop and test the success of a native fish exit strategy to allow native fish to migrate from the floodplain<br><br>Monitor and report on native fish strandings associated with the Projects.<br><br>In the event that large numbers of high value (i.e., threatened or endangered) large-bodied fish species (e.g., Murray Cod, Silver Perch) are found to be regularly stranded on the floodplain, review and investigate the cause of the strandings.<br><br>Develop and implement mitigation measures to address the strandings, which may include modifications to Project infrastructure, changes to operating arrangements, and/or capture and relocation of stranded native fish. | Operations | CMA |

| Environmental Delivery Standard | | Project phase | Responsibility |
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| GS1 | **Minimising erosion and sedimentation through design**<br><br>Design the projects having regard to erosion risks and soil characterisation, with the objective of dispersing water flows and minimising water velocities to minimise the potential for erosion and sedimentation, to the extent practicable. | Design | Contractor |
| GS2 | **Erosion and Sediment Control Plan**<br><br>The Construction Environmental Management Plan must include an Erosion and Sediment Control Plan which details measures to:<br><br>• Minimise clearance of vegetation and retain existing vegetation wherever possible, particularly along drainage lines and waterways, steep slopes and areas with unstable soils<br>• Stabilise exposed soil where applicable with the appropriate structural materials and media for the construction activities (e.g. stabilisation matting, rock armour or vegetation)<br>• Manage vehicle movement to designated roads and access areas as detailed in the Traffic Management Plan (EDS TT2)<br>• Erosion and sediment control measures to be maintained as appropriate following construction until the site is stabilised or vegetation is established, or as otherwise agreed with the land manager<br>• Install sediment controls around stockpiles to contain coarse soil and sediment, as applicable to prevent sedimentation of watercourses<br>• If required, treat dispersive or reactive soils prior to importation and use in construction. | Construction | Contractor |
| GS3 | **Soils and landform stability**<br><br>The Operation and Maintenance Plan must identify infrastructure locations (including but not limited to, regulators and containment banks) to be monitored for erosion risk. This monitoring is to inform adaptive management and/or any measures to ensure structural integrity of infrastructure. | Operation | LMW (as owners and operators of the infrastructure) |
| GW1 | **Construction groundwater management** | Construction | Contractor |

| Environmental Delivery Standard | | Project phase | Responsibility |
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| | The Construction Environmental Management Plan must include measures to manage groundwater impacts in accordance with the requirements under the *Environment Protection Act 2017,* subordinate legislation and other relevant statutory requirements and guidelines.<br><br>Measures must include:<br><br>• Avoid extracting contaminated groundwater wherever possible<br>• Seeking advice from a suitably qualified person on the most suitable way to manage contaminated groundwater<br>• Disposal of groundwater from dewatering must minimise impacts to land and/or waterways. Disposal option(s) selected for each dewatering activity must consider the volume and or quality of the groundwater to be disposed (i.e. salinity) and be undertaken to avoid and minimise effects on groundwater values<br>• Dewatering must be restricted to the minimum volume required<br>• Spills of contaminants must be avoided and managed in accordance with EDS CM1. | | |
| GW2 | **Operational groundwater management**<br><br>The Operation Environmental Management Plan must provide for the monitoring of groundwater and surface water levels, surface water flow and salinity to minimise the risk of salinity in accordance with the relevant Catchment Management Authority's salinity management program that complies with *Basin Salinity Management 2030* or its successor.<br><br>The groundwater monitoring should include wells or bores within the Projects' areas, including parts of each Project's area that are expected to be the most sensitive to groundwater rise or salinity increase, with a sufficient number of monitoring wells or bores within each WMA to adequately detect and interpret any changes in water levels and salinity.<br><br>The operation of the Projects should be reviewed and, if necessary, modified, if a significant trend of increasing salinity is identified at any of the monitoring sites. | Operation | CMAs (as preparers of plans) |
| HH1 | **Management of Historical Heritage during construction** | Construction | Contractor |

| Environmental Delivery Standard | | Project phase | Responsibility |
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| | The Construction Environmental Management Plan must include:<br><br>• An unexpected finds protocol that specifies measures to avoid and minimise impacts on any previously unidentified historical archaeological sites and values discovered during construction. The management protocol must be consistent with the requirements of the *Heritage Act 2017* and include procedures for ceasing work if human remains or archaeological sites, values or objects are discovered, notifying Heritage Victoria of the find, obtaining consent to deal with the find, and dealing with the find in accordance with the consent<br>• Measures to manage historical heritage impacts including physical barrier protection and/or exclusion zones to manage unplanned effects<br>• Details around training and awareness in relation to historic heritage places and obligations (e.g. Project induction toolbox talks and staff inductions)<br>• Requirement to obtain any necessary consent under the *Heritage Act 2017* prior to the disturbance of a known archaeological site. | | |
| HH2 | **Management of Historical Heritage during operation**<br><br>In accordance with the *Heritage Act 2017*, manage historical heritage impacts including:<br><br>• Details around training and awareness in relation to historic heritage places and obligations (eg. Project induction toolbox talks and staff inductions)<br>• An unexpected find protocol that specifies measures to avoid and minimise impacts on any previously unidentified historical archaeological sites and values discovered during operation. The management protocol must be consistent with the requirements of the *Heritage Act 2017* and include procedures for ceasing work if human remains or archaeological sites, values or objects are discovered, notifying Heritage Victoria of the find, obtaining consent to deal with the find, and dealing with the find in accordance with the consent<br>• Apply for and obtain any necessary consent under the *Heritage Act 2017* where an archaeological site is to be disturbed, and comply with the conditions of that consent. | Operation | CMA (as preparer of the plans)<br><br>Parks Victoria (joint, responsibilities as asset owner) |
| LU1 | **Land use effects – Construction** | Construction | LMW |

| | Environmental Delivery Standard | Project phase | Responsibility |
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| | Minimise or manage land use impacts by:<br><br>• Developing and implementing private landowner agreements in consultation with private landowners and in advance of construction activities occurring on their property which include measures to minimise site specific disruptions<br>• Obtain required consents from public land managers for areas to be occupied during construction for the building of infrastructure and comply with the conditions of those consents. | | |
| LU2 | **Land use effects – Operation**<br><br>Prior to operation:<br><br>• Establish private landowner agreements for the operation and maintenance of infrastructure and areas to be inundated<br>• Obtain licences from the public land managers, as applicable, for the operation and maintenance of infrastructure on public land.<br><br>During operation:<br><br>• Operate and maintain infrastructure in accordance with the private landowner agreements and licences over public land<br>• Undertake inundation in accordance with the private landowner agreements and licences over public land and in consultation with those landowners and public land managers. | Operation | CMAs (as owners of Seasonal Watering Plans and Operating Plans)<br><br>LMW (as preparers / owners of the O&M Plans) |
| LV1 | **Avoid and minimise visual impacts through design**<br><br>Design permanent and temporary works in consultation and agreement with relevant stakeholders (e.g. land and asset managers) to minimise any adverse landscape and visual impacts as far as reasonably practicable. | Design and construction | Contractor |
| LV2 | **Avoid and minimise visual impacts during construction**<br><br>As far as reasonably practicable, locate construction equipment, stockpiles, and other visible elements away from key sensitive receptor views (as identified in the Construction Environmental Management Plan) and otherwise incorporate | Construction | Contractor |

| Environmental Delivery Standard | | Project phase | Responsibility |
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| | screening measures such as hoarding where necessary. Remove construction equipment and temporary construction infrastructure when no longer required. | | |
| LV3 | **Minimise construction and operation lighting impacts**<br><br>Temporary and permanent lighting used during construction and operation must avoid and minimise light spillage where safe to do so (considering AS/NZS 4282:2019 Control of the Obtrusive Effects of Outdoor Lighting), to protect the amenity of adjacent sensitive receptors (as identified in the Operations Environment Management Plan).<br><br>Develop and implement measures to avoid and minimise lighting impacts to terrestrial and aquatic fauna species including considering the siting of temporary pumps and associated equipment to avoid impacts (such as downward angles or directional lights to avoid unnecessary light spill across a broader area than required, yellow/orange LED light wavelengths to avoid attracting insects and subsequently their predators (bats and birds)). | Construction and operation | Contractor<br><br>CMAs (as owners of Operating Plan) |
| NV1 | **Construction noise and vibration management**<br><br>The Construction Environmental Management Plan must include measures to minimise as far as reasonably practicable and manage construction noise and vibration in accordance with the requirements of the *Environment Protection Act 2017*, subordinate legislation and other relevant statutory requirements and guidelines. The Construction Environmental Management Plan must include measures, such as:<br><br>• Fit and maintain appropriate mufflers on vehicles<br>• Maximise shielding taking topography, existing structures and equipment location into consideration<br>• Where an activity is likely to cause noise effects to nearby noise and vibration sensitive receivers, restrict operating hours to between 7 am and 6 pm weekdays and 7 am to 1 pm Saturday, except where, for practical reasons, the activity is unavoidable. All reasonable measures must be implemented to mitigate the effects of such unavoidable works | Construction | Contractor |

| Environmental Delivery Standard | | Project phase | Responsibility |
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| | • Inform the community on work scheduling and working hours in accordance with EDS SB1 and advise local residents when unavoidable out-of-hours work would occur<br>• Provide the opportunity for the community to raise issues / concerns and respond to these in accordance with EDS SB1<br>• Setting speed limits for construction vehicles (in accordance with EDS TT2) to minimise vibration and noise effects<br>• Prior to the commencement of vibration intensive works (such as compaction, sheet piling, rock breaking), prepare a risk assessment to inform the need to undertake dilapidation survey(s). | | |
| NV2 | **Operational noise management**<br><br>Noise and vibration from operation and commissioning (e.g. pumps) must be minimised as far as reasonably practicable and be within established limits as set by the Noise Limit and Assessment Protocol for the control of noise from commercial, industrial and trade premises and entertainment venues (EPA Publication 1826). | Operation | CMAs (as owners of Operations Plans) |
| RU1 | **Waste management**<br><br>Develop and implement management measures for resource use and waste (excluding soils) minimisation during construction and operation in accordance with the EPA waste management hierarchy and management options, to address:<br><br>• Litter management<br>• Construction and demolition wastes<br>• Organic wastes. | Operation and construction | LMW (as asset owner / operator)<br>GMW (as State Constructing Authority)<br>CMA (as preparer of Operating Plan) |
| SB1 | **Community and Stakeholder Engagement Management Plan**<br><br>Prior to construction (other than preparatory buildings and works), develop and implement a Community and Stakeholder Engagement Management Plan to engage and consult the community and affected stakeholders and discuss progress and timing of construction activities. The Community and Stakeholder Engagement Management Plan must include measures to: | Construction | Contractor |

| Environmental Delivery Standard | | Project phase | Responsibility |
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| | • Provide advanced notification to relevant Councils and land managers to allow communication of upcoming construction activities, their timing and duration to direct visitors away from the construction footprint where appropriate<br>• Provide advanced notification to potentially affected stakeholders (i.e. local irrigators on Narcooyia Creek, private landowners and leaseholders) of the extent and timing of access disruptions associated with construction and commissioning activities<br>• Establish communication protocols to provide adequate notification to the local community, stakeholders, businesses, registered recreational users of the park/forest and emergency response organisations prior to access disruptions and communicate alternate access arrangements<br>• Notify relevant agencies (e.g. DEECA) to engage with license holders (e.g. apiary and other) to provide information on the timing of construction activities<br>• Establish a project specific hotline to receive queries or complaints<br>• Investigate and respond to community complaints or enquiries, as soon as practicable<br>• Prepare incident notification and governance protocols for relevant Councils and land managers.<br><br>Timing and type of notification to potentially affected stakeholders will be determined in consultation with the relevant stakeholder prior to the commencement of construction (other than preparatory buildings and works), and may be amended from time to time, subject to agreement. | | |
| SB2 | **Minimise social and business impacts – Construction**<br><br>Where recreation facilities are displaced or potentially affected by access restrictions or amenity impacts, work in collaboration with land managers, relevant Councils and other relevant authorities to identify relocation opportunities with the objective to maintain the continuity of affected facilities and activities, as far as reasonably practicable. | Construction | Contractor |
| SB3 | **Community and Stakeholder Engagement activities - Operation**<br><br>Catchment Management Authorities to continue to deliver communication and stakeholder engagement activities in accordance with Victoria's Catchment | Operation | CMAs, in consultation with land manager. |

| Environmental Delivery Standard | | Project phase | Responsibility |
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| | Management Authorities Community Engagement and Partnership Framework and Toolkit. A Communication and engagement plan relevant to the operation of the project must be prepared and include:<br><br>• Advanced notification to relevant Councils and land managers to allow communication of upcoming operational activities, their timing and duration to direct visitors away from inundation areas where appropriate<br>• Advanced notification to potentially affected local irrigators on Narcooyia Creek, private landowners and leaseholders of the extent and timing of access disruptions associated with commissioning and operational activities<br>• Advanced notification to the local community, stakeholders, businesses and registered recreational users of the park/forest and emergency response organisations prior to access disruptions and communicate alternate access arrangements<br>• Advanced notification to relevant agencies (e.g. DEECA) so that they can engage with license holders (i.e. apiary and other) to provide information on the timing of watering events<br>• A process to receive queries or complaints and respond to these.<br><br>Timing and type of notification to potentially affected stakeholders will be agreed prior to the commencement of construction, and may be amended from time to time, subject to agreement | | |
| SW1 | **Surface water management - Construction**<br><br>The Construction Environmental Management Plan must include processes and measures to manage surface water in accordance with the relevant requirements of the *Environment Protection Act 2017*, subordinate legislation and other relevant statutory requirements and guidelines. Mitigation and management measures will be informed by the EPA Publication 1834 and must include requirements to:<br><br>• Manage sediment and erosion during construction in accordance with EDS GS2<br>• Manage storage, handling and transport of materials in accordance with EDS CM1 for the protection of drains and waterway<br>• Establish water quality criteria through baseline monitoring (as specified in the CEMP) to inform site specific objectives for the treatment of water prior to discharge to receiving waterways | Construction | Contractor |

| | Environmental Delivery Standard | Project phase | Responsibility |
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| | • Manage dewatering rates to prevent bank slumping<br>• Monitor surface water quality (in accordance with the requirements set out in the CEMP) upstream and downstream from where works occur within a designated watercourse* to confirm effectiveness of established controls and implement additional controls as required<br>• Include contingency plans should flooding occur during construction to avoid spills, erosion and discharge of poor quality water to waterways.<br><br>* Designated waterways are named or unnamed, permanent or seasonal, and range in size from a river to a natural depression. | | |
| SW2 | **Surface water management – Operation**<br><br>In accordance with the *Water Act 1989*, operate the project within the Victorian annual environmental water management cycle and, at the local level, be guided by site specific Operating Plans developed to outline the operational arrangements including identification of overarching operating risks and mitigation measures associated with the delivery of environmental water.<br><br>The Catchment Management Authority is to develop the Operating Plan in consultation with relevant stakeholders prior to the first watering event.<br><br>Operation of the project to consider and seek to avoid, minimise and manage where practicable:<br><br>Adverse anoxic (blackwater) events<br>Excessive algal growth<br>Increased Carp population<br>Native fish stranded on the floodplain during drawdown events<br>Excessive erosion during filling and drawdown.<br><br>This will include consideration of the following measures as appropriate:<br><br>• Factor seasonal implications in the timing of filling and drawdown to reduce the likelihood of creating suitable breeding conditions for Carp and to reduce the risk of hypoxic or anoxic blackwater events. Inundation events should only occur in | Operation | CMAs (as preparers of Operating Plan) |

| Environmental Delivery Standard | | Project phase | Responsibility |
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| | the warmer months when conditions are conducive to carp breeding if benefits outweigh the risks associated with Carp proliferation<br>• Maintain throughflow during managed inundation if appropriate and possible to mitigate anoxic conditions<br>• Assess accumulated organic material load and adjust inundation timing and extent (if larger litter loads are present then consider small inundation with maintenance of throughflow) to minimise the risk of anoxic blackwater events<br>• Provide throughflow to replicate first flush or consider staged inundation to minimise the risk of anoxic blackwater events<br>• Manage drawdown rates to maintain mixing and dilution in the Murray River, especially during times of low Murray River flow to reduce the negative impacts of hypoxic or anoxic discharges from the Project areas on the Murray River.<br>• Develop and test the success of a native fish exit strategy to allow native fish to migrate from the floodplain<br>• Develop and test the success of a strategy to retain carp on the floodplain for the Hattah Lakes North project<br>• Manage drawdown rates to minimise increase in velocity and shear stress downstream of regulators.<br><br>Operating rules for regulator ER1 should have regards to variability in Euston Weir pool levels, which may provide tailwater support for releases from regulator ER1. | | |
| SW3 | **Surface water – Monitoring**<br><br>Monitor the volume, duration, frequency and surface water quality of managed environmental watering events in accordance with the Operation Environmental Management Plan to inform adaptive management (e.g. through the *Operating Arrangements for the Environmental Water Holdings of the Murray System* and the Ecological Monitoring, Evaluation and Reporting Plans). | Operation | CMA (as preparer and owner of plans) |
| SW4 | **Update hydraulic assessment**<br>Prior to construction, update the hydraulic analysis to inform (where necessary and practicable) design considerations (EDS GS1) and operational considerations (GS3, SW2, ACH4). Hydraulic analysis should include: | Design | LMW |

| Environmental Delivery Standard | | Project phase | Responsibility |
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| | • Mapping of key hydraulic parameters (depth, velocity and shear stress) for each operating scenario (including managed inundation events and comparable natural and existing flood events) at key stages of managed inundation events (including filling, holding and releasing with regulators closed and open)<br>• 'Difference maps' should be used in conjunction with mapping of the key hydraulic parameters for each scenario to determine the locations where they key hydraulic parameters will be changed by the Projects, and the magnitude of the change.<br><br>Outcomes of this hydraulic analysis and further assessment should be used to inform any necessary design or operational changes and an updated assessment of the overall improvements to be provided to the Secretary of Department of Energy, Environment and Climate Action under Clause 4.6 of the incorporated document. | | |
| SW5 | **Surface water design – regulators, containment banks and spillways**<br><br>The design of the regulators should provide for suitable flow velocities to enable the passage of all target species of native fish to the extent reasonably practicable.<br><br>The design of the containment banks and spillways should facilitate turtle passage. | Design | Contractor |
| TT1 | **Safety in road design**<br><br>Undertake independent road safety audits during project development to ensure all new and upgraded access tracks meet relevant land manager or road management authority requirements with respect to transport network user safety. Implement relevant recommendations from the audit as appropriate. | Design | Contractor |
| TT2 | **Traffic Management Plan**<br><br>Prepare and implement a Traffic Management Plan to minimise disruption during construction in consultation with relevant road management authorities and the land manager. The Traffic Management Plan must clearly outline measures to:<br><br>• Identify routes for construction haulage and construction vehicles travelling to and from the projects (including within the park(s) and outside) and identify any specific requirements for those routes | Construction | Contractor |

| Environmental Delivery Standard | | Project phase | Responsibility |
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| | • Minimise road closures, access restrictions and disruption to all road users and active users<br>• Provide for safe construction practices in accordance with road authority requirements<br>• Specify vehicle speed limits considering safety, noise, vibration and dust.<br>• Provide alternative routes for affected road users and active users where practicable<br>• Maintain property accesses during construction where practicable or provide alternative access<br>• Maintain emergency service access (as developed in consultation with emergency services)<br>• Notify affected residents and landholders of changes to traffic conditions and access to property for duration of the works<br>• Provide a clear delineation between road and areas dedicated for construction and roads and areas available for public use (e.g through fencing, signage, etc)<br>• Monitor weather conditions to reduce the risk of a heavy vehicle travelling into the area during poor weather conditions<br>• Minimise the risk of vehicles getting bogged or stuck due to wet weather (including the requirement for recovery equipment to be on site)<br>• Provide adequate access to heavy vehicles (including adequate vegetation clearance from vehicles)<br>• Determine whether any pavement damage has occurred due to construction activity (including the requirement for pre and post construction road pavement reports. | | |
| TT3 | **Safety during operation – recovery equipment**<br><br>The Operations and Maintenance Plan must detail the requirement for all maintenance vehicles associated with the operation of the projects to have recovery equipment on-board in order to recover any vehicles that are bogged or stuck and blocking access. | Operation | LMW (as preparer of O&M Plan) |
| TT4 | **Safety during operation – signage**<br><br>During operation, the land manager is to provide: | Operation | Parks Victoria (as Land manager) |

| Environmental Delivery Standard | | Project phase | Responsibility |
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| | • advisory signage on closed or inaccessible tracks<br>• public advice regarding changes in-park/forest conditions (eg. via websites). | | |
| TT5 | **Track maintenance program**<br><br>Land managers to continue implementing a track maintenance program (according to regional priorities) to facilitate continued safe access for park users and emergency services. | Operation | Parks Victoria (as Land manager) |

# 12 Monitoring program

Monitoring, auditing, inspection and investigation requirements have been established to monitor the projects compliance with the Environmental Delivery Standards. The monitoring program outlined below is based on the final specialist assessments. Further development of the monitoring program would occur following the outcomes of the EES assessment process, in consultation with the project partners and to address relevant approval conditions. As described in Sections 7.3.1 and 8.2.2 the updated monitoring programs would be incorporated into the approved Operation Environmental Management Plan and Construction Environmental Management Plan.

As noted in Section 7.4.1, the Ecological Monitoring, Evaluation and Reporting Plan would also be updated to incorporate relevant monitoring and evaluation requirements. The Plan has been drafted to monitor, evaluate and report on the ecological outcomes of the VMFRP for a baseline period of approximately five years before the infrastructure is completed and at then ongoing for the duration of environmental watering.

It is noted that the risks and potential impacts on ecological aspects predominantly relate to the construction phase, while the benefits relate to the operational phase. There are some ecological risks and uncertainties that relate to the operational phase.

Accordingly, all of the ecology-related construction- monitoring items (marked M in Table 13) are relevant to monitoring of ecological impacts. This includes air quality, aquatic ecology, groundwater, geology, soils and contamination, surface water and terrestrial ecology. Similarly, all of the ecology-related operational monitoring items relate to monitoring of ecological benefits (as marked below). Table 13 refers to which items also specifically address the monitoring of risks and uncertainties associated with the projects' ecological benefits during the operation phase.

As noted in Section 7.4 review of monitoring would be undertaken within the existing environmental water planning and delivery framework and adaptive management cycle. This includes systematic review of project performance relative to explicitly articulated objectives and targets, and for effective delivery of lessons learned back into the adaptive decision making.

**Table 13: Belsar-Yungera and Hattah Lakes North projects monitoring register**

Key: M= Monitoring, AI – Auditing / Inspection, I = Investigation, C= Construction, O = Operation, WC = Wet Commissioning. ^ monitoring of operational impacts, risks and uncertainties, * - monitoring of ecological benefits

| ID & Discipline | Performance objective | Phase | Indicator | Monitoring requirement and parameters | Locations | Frequency | Responsibility |
|---|---|---|---|---|---|---|---|
| M AQ1<br><br>Air quality | Minimise dust within 20m of stationary human sensitive receptors | C | Dust plumes from construction activities at stationary human sensitive receptor(s) (i.e. occupied residences) located within 20m of the construction footprint. | As required by EDS AQ1, implement real-time monitoring where construction and/or haulage on unsealed roads occurs within 20m of occupied residences. If fine dust particles are measured to exceed PM10 of 100 ug/m3 for a 15 minute average and/or the trigger level identified in EPA Publication 1961 Guideline for assessing and minimising air pollution in Victoria and following an investigation which determines that the dust is attributed to the project construction, then the contractor must temporarily modify or suspend dust generating activities until controls are put in place to avoid and reduce dust. | Where construction and/or haulage on unsealed roads occurs within 20m of occupied residences | While construction and/or haulage is being undertaken at the specified locations (i.e. not required outside of working hours). | Construction contractor |
| M AE1<br><br>Aquatic ecology | To assess the maintenance of seasonal populations of large, medium and small-bodied native fish. | O^ | Local populations of large, medium and small-bodied native fish do not decline below baseline (pre- | Boat electrofishing, fyke netting | Narcooyia Creek – four sites specified in MER program | Annual: late summer/autumn | Mallee CMA |

| ID & Discipline | Performance objective | Phase | Indicator | Monitoring requirement and parameters | Locations | Frequency | Responsibility |
|---|---|---|---|---|---|---|---|
| | | | intervention) levels in Narcooyia Creek. | | | | |
| M AE2<br><br>Aquatic ecology (Belsar only) | To assess movement of large and medium native fish to maintain populations. | O^ | Movement of large and medium native fish occurs between the River Murray and Narcooyia Creek within the Belsar-Yungera system every year. | Trapping, tagging and tracking | ER1 | Annual (spring) | Mallee CMA |
| M AE3<br><br>Aquatic ecology | To assess the benefits of floodplain watering for small-bodied fish productivity. | O* | Abundance of small-bodied native fish in wetlands and floodplain lakes increases due to environmental watering. | Boat/backpack electrofishing, fyke netting | Wetlands and floodplain lakes (Powell and Carpul) within the inundation area. Effectiveness of watering to be determined through correlation with habitat quality and trends in fish abundance over time. | At least once during each inundation event. Trends evaluated after each watering event. Opportunity to reduce frequency and/or cease monitoring if a clear and reliable correlation with environmental watering is established. | Mallee CMA |
| M AE4<br><br>Aquatic ecology (Belsar only) | Minimise potential adverse effects of fox predation on adult turtles moving around regulator ER1 | O^ | Fox activity and obvious signs of turtle predation. | Install fauna cameras to assess fox activity and predation, as a part of the ongoing targeted fox management program at regulator ER1.<br>If evidence of increased fox activity or predation of turtles found, the turtle species is to be | Focus effort at ER1 regulator | Install cameras from late spring to autumn during nesting seasons (for each turtle species).<br><br>Install fauna cameras for one season only. If there is evidence of | Mallee CMA |

| ID & Discipline | Performance objective | Phase | Indicator | Monitoring requirement and parameters | Locations | Frequency | Responsibility |
|---|---|---|---|---|---|---|---|
| | | | | identified if possible, location and time of observation recorded. | | predation, then continue fauna cameras for additional seasons, until there is not evidence of fox predation. | |
| M AE5<br><br>Aquatic ecology (Belsar only) | Minimise potential adverse effects on turtle passage due to operation of the ER1 regulator | O^ | Turtle presence in the fishway | Observations of trapped turtles by LMW during fishway operation or maintenance visits<br>If turtles found trapped in fishway, the species is to be identified if possible, location and time of observation recorded. Notification to be sent to Mallee CMA and logged on LMW Environmental management system.<br><br>Note - the results from the fauna cameras in the fox control monitoring can also be used to supplement LMW observations.<br>If turtles are consistently trapped within the fishway structure, undertake Contingency monitoring 1 | ER1 regulator fishway | Ongoing: During all operation or maintenance visits. | Mallee CMA (formal monitoring)<br><br>LMW (opportunistically during operation and maintenance visits) |
| M AE5<br><br>Aquatic ecology (Belsar only) | | O^ | Contingency monitoring: Turtle community assessment (species diversity and abundance) | Contingency monitoring 1: Trapping (e.g., fyke and cathedral netting) or acoustic tagging | Upstream and downstream of regulator ER1 | Annually during spring/summer prior to nesting when males looking for females to breed for up to 5 years. Review need to | Mallee CMA |

| ID & Discipline | Performance objective | Phase | Indicator | Monitoring requirement and parameters | Locations | Frequency | Responsibility |
|---|---|---|---|---|---|---|---|
| | | | | | | continue monitoring annually. | |
| M AE5<br><br>Aquatic ecology (Belsar only) | | O^ | | Subject to outcomes of contingency monitoring: Potential construction of a turtle ramp, reducing bank slopes, use of fencing to direct turtles around the structure | Regulator ER1 | Post-management monitoring to determine efficacy of management actions if required | Mallee CMA |
| M AE6<br><br>Aquatic ecology (Belsar only) | Confirmation that the fishway is operating in accordance with design criteria. | O^ (WC) | Fishway design criteria. | Check water flow through the fishway (velocity). Record any fish activity. | ER1 Fishway (Belsar-Yungera) | Once off during wet commissioning | LMW (opportunistically during operation and maintenance visits) |
| M AE7 | Monitoring and reporting on native fish strandings resulting from managed inundation events, so that recurrent strandings can be identified and investigated to enable management measures to be undertaken to address the strandings as required | O^ | Fish stranding events | Monitor and report on native fish strandings from managed inundation events | Areas inundated by managed inundation events | During drawdown of inundation events. Undertake a review of the monitoring after the first 5 inundation events to confirm and refine ongoing monitoring requirements (e.g. key risk factors and locations) | Mallee CMA |
| M GSC1<br><br>Geology soils and contamination | Assess water containment and conveyance infrastructure locations with potential for erosion /or sedimentation | O^ | Visual indicators (e.g., notching, bank slumping) of induced soil, water or wave erosion/sedimentation. | Visual inspections (including photo points) of waterways and constructed infrastructure. | Infrastructure locations (including, but not limited to, regulators and containment banks). | Before, during and after an environmental watering event | Asset owner |

| ID & Discipline | Performance objective | Phase | Indicator | Monitoring requirement and parameters | Locations | Frequency | Responsibility |
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| | and any instream location identified as at risk from modelling in EDS SW4 to inform adaptive management and/or any measures to ensure structural integrity of infrastructure. | | | | Instream location s identified as at risk from modelling in EDS SW4 by releases from the Projects areas. | | |
| M GW1<br><br>Groundwater | Identify changes to groundwater levels as a result of environmental watering | O^ | Groundwater depth and groundwater elevation trends over time compared with the forecast changes | Groundwater depth below surface and groundwater reduced level. The frequency and location of monitoring may be adjusted through adaptive management. | Monitoring to occur at, or in the vicinity of, the following bores[5]:<br><br>Belsar-Yungera: 6969, 26219, 26231, 26274, 26810, 26811, 26812, 26813, 40057, 40058, 40059, 123757, 123758, WRK950452, WRK958592, WRK958593, plus additional locations in areas of vegetation potentially at risk from elevated | Monthly<br>Following the first maximum inundation event, undertake an interim review of monitoring outcomes and identify appropriate adjustments to the monitoring program.<br>Following the second maximum inundation event, undertake a comprehensive review of monitoring outcomes and identify appropriate adjustments to the monitoring program.<br>Due to the frequency of | Mallee CMA |

[5] Bore ID's valid as at August 2022 (date of finalisation of the EES Groundwater assessment report).

| ID & Discipline | Performance objective | Phase | Indicator | Monitoring requirement and parameters | Locations | Frequency | Responsibility |
|---|---|---|---|---|---|---|---|
| | | | | | groundwater levels or salinity, to be agreed with Mallee CMA.<br><br>Hattah:<br>7016, 7017, 7019, 7022, 7024, 7683, 7852, 7853, 7859, 26266, 26289, WRK059899, WRK059901, WRK059902, WRK059903, WRK059904, WRK059905, WRK958603, plus additional locations in areas of vegetation potentially at risk from elevated groundwater levels or salinity, to be agreed with Mallee CMA. | the maximum inundation event for the Lake Boolca Water Management Area, the monitoring requirements could be reviewed after the first watering event. | |
| M GW2<br><br>Groundwater | Identify changes to groundwater quality as a result of environmental watering | O^ | Groundwater quality trends over time compared with the forecast | • Alkalinity (Bicarbonate)<br>• Alkalinity (Hydroxide) as CaCO3<br>• Alkalinity (total) as CaCO3<br>• Ammonia as N<br>• Arsenic<br>• Bicarbonate Alkalinity as CaCO3<br>• Cadmium<br>• Calcium | Monitoring to occur at, or in the vicinity | Annual.<br>Following the first maximum inundation event, undertake an interim review of monitoring outcomes and identify appropriate adjustments to the monitoring program. | Mallee CMA |

| ID & Discipline | Performance objective | Phase | Indicator | Monitoring requirement and parameters | Locations | Frequency | Responsibility |
|---|---|---|---|---|---|---|---|
| | | | | • Chloride<br>• Chromium (III+VI)<br>• Copper<br>• Kjeldahl Nitrogen Total<br>• Lead<br>• Magnesium<br>• Mercury<br>• Nickel<br>• Nitrate & Nitrite (as N)<br>• Nitrate (as N)<br>• Nitrite (as N)<br>• Nitrogen (Total)<br>• pH<br>• Phosphorus<br>• Phosphorus reactive (as P)<br>• Potassium<br>• Redox Potential<br>• Sodium<br>• Soluble Carbonate as CaCO3<br>• Sulfate as SO4<br>• Zinc | of, the following bores[6]:<br><br><u>Belsar-Yungera:</u><br>26231, 26274, 26810, 26813, 40058, 40059, 123757, 123758, WRK950452, WRK958592, WRK958593, plus additional locations in areas of vegetation potentially at risk from elevated groundwater levels or salinity, to be agreed with Mallee CMA.<br><br><u>Hattah:</u><br>7683, 7852, 7853, 7859, WRK059899, WRK059902, WRK059903, WRK059904, WRK059905, plus additional locations in areas of | Following the second maximum inundation event, undertake a comprehensive review of monitoring outcomes and identify appropriate adjustments to the monitoring program.<br><br>Due to the frequency of the maximum inundation event for the Lake Boolca Water Management Area, the monitoring requirements could be reviewed after the first watering event. | |

[6] Bore ID's valid as at August 2022 (date of finalisation of the EES Groundwater assessment report).

| ID & Discipline | Performance objective | Phase | Indicator | Monitoring requirement and parameters | Locations | Frequency | Responsibility |
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| | | | | | vegetation potentially at risk from elevated groundwater levels or salinity, to be agreed with Mallee CMA. | | |
| M GW3<br><br>Groundwater | Identify changes to surface water levels that influence groundwater<br>Identify changes in surface water salinity, including the effect of groundwater discharge | O^ | Water level, salinity and flow | Measure surface water levels, flow and salinity at specific locations. | Belsar-Yungera:<br><br>New surface water monitoring sites to be established<br><br>• ER1 Regulator, Upstream<br>• J2 A Regulator, Upstream<br>• ER3 Regulator, Downstream<br>• Lake Powell Box Culvert Downstream<br>• Lake Carpul Box Regulator Downstream<br><br>Hattah:<br><br>Site ID and new surface watering monitoring sites to be established<br><br>• K10 Regulator Upstream | Daily.<br>Following the first maximum inundation event, undertake an interim review of monitoring outcomes and identify appropriate adjustments to the monitoring program.<br>Following the second maximum inundation event, undertake a comprehensive review of monitoring outcomes and identify appropriate adjustments to the monitoring program.<br><br>Due to the frequency of the maximum inundation event for the Lake Boolca Water Management Area, the monitoring requirements could be | Mallee CMA |

| ID & Discipline | Performance objective | Phase | Indicator | Monitoring requirement and parameters | Locations | Frequency | Responsibility |
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| | | | | | • Bitterang Regulator Downstream<br>• 414231 Chalka Creek | reviewed after the first watering event. | |
| M SW1<br><br>Surface water | Assess the effect of the project's construction on surface water quality. | C | <u>Routine field-based monitoring</u>:<br><br>• Electrical conductivity (salinity)<br>Turbidity<br>Dissolved oxygen<br>pH<br>Temperature<br>Visual and olfactory inspection for oils and greases, litter and algal growth. If hydrocarbons are suspected to be present, a sample will be collected for laboratory analysis of oils and grease and total petroleum hydrocarbons.<br>If algae are suspected to be present, a sample will be collected for laboratory analysis of nutrients (total | Specific monitoring programs for each construction location to be developed and documented in the CEMP prior to project commencement. This will include:<br><br><u>Routine monitoring:</u><br>Assess whether the project's construction is adversely effecting surface water quality and if relevant EDS are being implemented and effective. Thresholds for acceptable levels of change in indicators are provided in Table 60 of the EES Central Surface Water Assessment. If monitoring downstream of a construction site shows water quality exceeds values in Table 60 and the exceedance is due to construction activities (i.e. a comparison between water quality upstream and downstream of the construction shows compliance upstream but non-compliance downstream) implement contingency actions. | Specific monitoring programs for each construction location to be developed and documented in the CEMP prior to project commencement. This will include:<br><br><u>Routine monitoring:</u><br>For floodplain creeks and the Murray River –<br>Where there is potential for runoff from the active construction sites to a watercourse, monitor upstream and downstream of the active area of construction in both immediate receiving waters (floodplain creeks) and the Murray River.<br>Where construction | <u>Routine monitoring:</u><br>Weekly for one month prior to construction to establish baseline (if water is present)<br>At least weekly during construction whenever water is present, or more frequently during and after: hot weather/ rainfall event.<br>If algae are suspected to be present, a sample will be collected for laboratory analysis.<br><br><u>Contingency monitoring</u><br>As required by the nature of the event being responded to (e.g. daily) to show duration of potential impact and effectiveness of rectification actions. | Construction contractors |

| ID & Discipline | Performance objective | Phase | Indicator | Monitoring requirement and parameters | Locations | Frequency | Responsibility |
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| | | | nitrogen and total phosphorus), chlorophyll and identification of algal species.<br><br><u>Contingency monitoring:</u><br>• Indicators identified during contaminated land assessment that could leach to surface waters due to construction activities at levels above objectives outlined in the NEPM 2013 or Environment Reference Standard as a result of the project (in accordance with EDS CM1). Contaminants accidentally spilled with potential to pollute watercourses. | <u>Contingency monitoring:</u><br>Assess whether the project's construction is adversely effecting surface water.<br>The determination of effect should be based on water quality exceeding thresholds in Table 60 of the EES Central Surface Water Assessment that can be attributed to construction activities. | blocks a waterway (e.g. construction of regulator ER1), monitor within the watercourse both upstream and downstream of that blockage.<br>For wetlands – wetlands that receive surface water inflows from the active area of construction and a reference site (if relevant to individual construction locations).<br><br><u>Contingency monitoring</u><br>Upstream and downstream of affected areas, including multiple downstream sites to detect extent of potential impact. | | |
| M SW2<br><br>Surface water | Assess the effect of environmental watering on surface water quality | O^ | Indicators are derived from the VMFRP Ecological MER plan (Sparrow et al. 2020) | Specific monitoring programs for each project area and the process for evaluation and reporting against EDS to be | On the floodplain - site(s) to be identified at infrastructure | Baseline water quality will be established in the Murray River and across the floodplain | Mallee CMA |

| ID & Discipline | Performance objective | Phase | Indicator | Monitoring requirement and parameters | Locations | Frequency | Responsibility |
|---|---|---|---|---|---|---|---|
| | on the floodplain and within the Murray River. | | as covariates for enabling assessment of effects on floodplain biota such as fish during inundation events:<br><br>Flow<br><br>In-situ (field based) physico-chemical parameters<br>• Electrical conductivity (salinity)<br>• Turbidity<br>• Dissolved oxygen<br>• pH<br>• Temperature<br>• Visual observations for signs of severe blackwater or excessive algal growth.<br>Parameters requiring laboratory analysis (as needs basis):<br>• Total nitrogen<br>• Total phosphorus<br>• Organic carbon (dissolved and particulate)<br>• Chlorophyll<br>• Algal species identification and | developed and documented in the Operation Environmental Management Plan (EDS SW2, SW3) prior to project commencement. This will include:<br><br>• Monitor flow at outlet regulators<br>• Monitor changes in surface water quality across the floodplain during a managed inundation event to maximise beneficial effects and minimise adverse effects to environmental values supported by surface water in areas where sensitive environmental values exist (e.g. native fish and where throughflow to the Murray River occurs). Assess if relevant EDS are being implemented and are effective.<br><br>Rates of through flow (discharge to the Murray River during the managed inundation event) should be adjusted based on the monitoring results to minimise effects of low dissolved oxygen on the Murray River.<br>Results from managed inundation events should also be | locations and within the floodplain at locations that support sensitive receptors (for example, aquatic species or water users). Sites to be selected by CMA and may include sites already included in other monitoring programs.<br>Within the Murray River - Upstream and downstream* of the floodplain return flow (and within the return flow prior to entering the Murray River).<br><br>* immediately downstream of the floodplain return flow and further downstream if adverse effects are detected after floodplain outflows and the Murray River are mixed. | (where possible i.e. for areas may be already wet) prior to the inundation event. For the Murray River, data from the MDBA RWQMP could be used.<br>On the floodplain locations – minimum daily recording of out-flow weekly monitoring during a managed inundation event for in-situ parameters, spot monitoring for parameters requiring laboratory analysis if in-situ monitoring indicates degraded water quality that could affect sensitive values. The specific site locations will change as the event progresses and may depend on access limitations.<br>Within the Murray River – immediately prior to drawdown from a managed inundation event then weekly during floodplain return flows for in-situ parameters in the Murray River. | |

| ID & Discipline | Performance objective | Phase | Indicator | Monitoring requirement and parameters | Locations | Frequency | Responsibility |
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| | | | quantification (if an algal bloom occurs). | used to inform subsequent managed inundation events. | | Spot monitoring for parameters requiring laboratory analysis if in-situ monitoring indicates degraded water quality that could affect sensitive values.<br><br>Note: location, frequency of sampling and specific parameters may be adjusted by the relevant water manager in line with access and existing programs. | |
| M TE1<br><br>Terrestrial ecology | To avoid and minimise adverse effects on Regent Parrot during construction | C | Active Regent Parrot nest/s within trees to be removed (during breeding season: August to December).<br><br>Active Regent Parrot nest is disturbed as a result of construction activities (within 350 metres of active construction sites during breeding season: August to December inclusive) | 1. Pre-clearance surveys, including nest surveys, will be undertaken as per EDS E2b prior to tree removal for construction.<br><br>2. Assessment of known nesting trees and identification of new nesting trees, if breeding is found to occur in trees not previously known to support nesting. Refer to hatched areas on map in EES Central Terrestrial report showing potential nesting locations. The main locations where Regent Parrots are known to breed include the 'Gearbox Loop' area of Yungera Island. There is also the potential that they could breed in the vicinity of | 1. Pre-clearance surveys: construction footprint.<br><br>2. Assessment of nesting trees: Potential nesting trees in potential nesting habitat (appropriate EVC and within 120 m of water, as determined in EES) within 350 metres of proposed construction sites (includes roads and access tracks if | Pre-clearance surveys: prior to clearing in accordance with EDS E2<br><br>Confirmation of known nesting trees and identification of new nesting trees: prior to commencement of construction<br><br>Routine monitoring of known nesting sites: weekly | Suitably qualified or experienced ecologist or zoologist |

| ID & Discipline | Performance objective | Phase | Indicator | Monitoring requirement and parameters | Locations | Frequency | Responsibility |
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| | | | | ER1 regulator and associated levee.<br>Assessment of known and potential nesting trees within 350 metres of active construction sites (or scheduled construction site where works commence during the breeding season) at the start of the breeding season (August – September), prior to construction activities commencing at these locations.<br><br>3. Monitoring of active nesting trees within 350 metres of active construction sites during breeding season: August to December inclusive.<br><br>A 'scheduled construction site' is one where works occur during the Regent Parrot breeding season, but may or may not have commenced before the breeding season | construction activities occur there – excludes vehicle transit).<br><br>3. Monitoring of nest trees: Active nesting trees (as determined in EES) within 350 metres of active or scheduled construction sites (includes roads and access tracks if construction activities occur there): throughout breeding season: August to December inclusive. | | |
| M TE2<br><br>Terrestrial ecology | To meet land manager and landowner post-construction requirements. | C & O^ | Area within Construction Footprint left as per agreed with land manager and landowners. | Monitoring of topsoil redistribution, native and exotic vegetation cover, and organic litter and log cover within the Construction Footprint.<br><br>Monitoring of weed cover following construction to identify | Construction footprint with specific focus on waterways | First 12 months following construction unless specified otherwise in the Section 27 consent or agreed with the land manager. Subject to outcomes of | Land manager or as otherwise agreed with land manager (i.e through section 27 consent) |

| ID & Discipline | Performance objective | Phase | Indicator | Monitoring requirement and parameters | Locations | Frequency | Responsibility |
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| | | | | if additional management is required to prevent an increase in Weeds of National Environmental Significance, weeds listed under the CaLP 1994 and those listed as FFG Act threatening processes. | | monitoring, management and further monitoring may be required. | |
| M TE3<br><br>Terrestrial ecology | To assess the change in weed occurrence (terrestrial and aquatic) and cover as a result of project environmental watering | O^ | Occurrence or cover does not increase above threshold set in PPAMP for high threat weeds (i.e. Weeds of National Significance, designated high threat weeds, declared noxious weeds under the CaLP Act and/or weeds listed under DSE (2009) Advisory list of environmental weeds of aquatic habitats of Victoria) as a result of environmental watering. | 10x10 m vegetation quadrats to document species cover-abundance, including weeds. Monitor weeds within and adjoining the Maximum Inundation Area. This includes monitoring populations on ground and active management as required (e.g. infestations of high threat weeds using appropriate treatment techniques). This will include:<br>• Vegetation quadrat monitoring to identify species presence. | Sufficient quadrats must be sampled to evaluate the statistical significance of watering effects. Quadrats should represent all major EVCs with sampling effort weighted according to EVC extent.<br>The effect of watering is to be determined through comparison with contrasting water regimes at other VMFRP. | Annual for at least 15 years, with continued need to be reviewed thereafter every 3 years | Mallee CMA |
| | | O^ | | Surveillance monitoring of weed infestation occurrence using a rapid search at specified search areas. Any other observed significant weed infestations should be added to the | Rapid surveillance at high risk locations as specified in Pest Plant and Animal Management Plan. Report on | Annual for at least 15 years, with continued need to be reviewed thereafter every 3 years | Parks Victoria |

| ID & Discipline | Performance objective | Phase | Indicator | Monitoring requirement and parameters | Locations | Frequency | Responsibility |
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| | | | | surveillance program search areas. | effectiveness of pest plant control through surveillance program. | | |
| M TE4<br><br>Terrestrial ecology | To assess the change in damage to habitat from rabbits, goats, pigs and kangaroos as a result of project environmental watering | O^ | Pest animal damage and/or abundance not to exceed thresholds identified in PPAMP for rabbits, goats, pigs and kangaroo within and adjacent to the Maximum Inundation Area as result of environmental watering. | Monitor old/new rabbit and pig damage and abundance of rabbit, goat and kangaroo populations. Methods to be detailed in the Pest Plants and Animals Monitoring and Management Plan (EDS E3). | Pest animal damage and/or abundance will be measured within and adjacent to the MIA. Sampling locations will be defined in the Pest Plants and Animals Monitoring and Management Plan (EDS E3). Sufficient sampling will be undertaken to detect the significance of watering effects. The significance of watering effects will be determined by comparison to control areas outside the MIA. | Frequency to be determined for each pest species in PPAMP, for at least 15 years, with continued need to be reviewed after every 3 years | Parks Victoria |
| M TE5<br><br>Terrestrial ecology | To assess the change in the abundance of cats and foxes as a result of project environmental watering | O^ | Fox and cat abundance not to exceed thresholds identified in PPAMP within and adjacent to the maximum area of | Monitor fox and cat populations. Methods to be detailed in the Pest Plants and Animals Monitoring and Management Plan (EDS E3). | Cat and fox abundance will be measured within and adjacent to the MIA. Sampling locations | Frequency to be determined in PPAMP, for at least 15 years, with continued need to be reviewed after every 3 years. | Parks Victoria |

| ID & Discipline | Performance objective | Phase | Indicator | Monitoring requirement and parameters | Locations | Frequency | Responsibility |
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| | | | inundation as a result of environmental watering. | | will be defined in the Pest Plants and Animals Monitoring and Management Plan (EDS E3). Sufficient sampling will be undertaken to detect the significance of watering effects. The significance of watering effects will be determined by comparison to control areas outside the MIA. | | |
| M TAE1<br><br>Terrestrial and aquatic | To determine the level, duration and extent of the inundation during each event | O* | Inundation of water management areas as described in the EES Project description. This includes:<br>Belsar: WMA1 – 1540ha, WMA2 – 526ha, WMA3 – 36ha, WMA4 – 272ha<br>Hattah: Chalka North – 420ha, Lake Boolca – 710ha | Monitor the:<br>- level<br>- duration; and<br>- extent<br>of managed environmental watering events. | Within Maximum Inundation Area | At an appropriate interval during the event.<br><br>CMA/PV to advise on frequency, consistent with current practices. | Mallee CMA |
| M TAE2<br><br>Terrestrial and aquatic | To assess improvement in water-dependent vegetation in wetlands and floodplain lakes in | O* | For wet wetlands:<br>• characteristic PFG species richness meets target* | 10x10 m wetland vegetation quadrats to document species occurrence (including PFG) and cover-abundance. Saplings also | Sufficient quadrats must be sampled to evaluate the significance of | Annual for at least 15 years, with continued need to be reviewed | Mallee CMA |

| ID & Discipline | Performance objective | Phase | Indicator | Monitoring requirement and parameters | Locations | Frequency | Responsibility |
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| | response to environmental watering | | • characteristic PFG cover meets target *<br>For dry wetlands,<br>• characteristic PFG species richness meets target*<br>• characteristic PFG cover meets target*<br>**Targets to be defined in the Environmental Water Management Plan* | counted.<br>Number of individuals of each threatened flora also counted/estimated. | watering effects.<br>The number of quadrats should be weighted according to the extent of EVCs.<br>The effect of watering is to be determined through comparison with contrasting water regimes at other VMFRP sites. | thereafter every 3 years. | |
| M TE6<br><br>Terrestrial ecology | To assess improvement in the understorey of River Red-gum woodland, Black Box woodland and Lignum shrubland in response to environmental watering | O* | • For River Red Gum / Black Box / Lignum EWRC sites, characteristic PFG species richness meets target*<br>• For River Red Gum / Black Box / Lignum EWRC sites, characteristic PFG species cover meets target*<br><br>*Targets to be defined in the Environmental Water Management Plan* | 10x10 m vegetation quadrats to document species occurrence (including PFGs) and cover-abundance. Saplings counted also. | Sufficient quadrats must be sampled to evaluate the significance of watering effects.<br>The number of quadrats should be weighted according to the extent of EVCs.<br>The effect of watering is to be determined through comparison with contrasting water regimes at other VMFRP sites. | Annual for at least 15 years, with continued need to be reviewed thereafter every 3 years | Mallee CMA |

| ID & Discipline | Performance objective | Phase | Indicator | Monitoring requirement and parameters | Locations | Frequency | Responsibility |
|---|---|---|---|---|---|---|---|
| | | O* | For River Red Gum / Black Box / Lignum EWRC sites stand condition score meets target defined in the Environmental Water Management Plan | Stand condition monitored via remote sensing technique and model verified / calibrated by MER stand condition method. | Entire site. | Modelled stand condition to be reported every five years at year 0, 5, 10 and 15.<br>Ongoing field plot data to be collected to validate and verify model as required. | Mallee CMA |
| M TE7<br><br>Terrestrial ecology | To assess the response of native fauna species over time to environmental watering. | O* | Species richness, relative abundance, recruitment, presence of threatened/notable species is meets targets* for:<br><br>• Wetland birds<br>• Woodland birds<br><br>Species richness, relative abundance, recruitment, extent of distribution, presence of threatened/notable species meets targets* for frogs<br><br>* *Targets to be defined in the Environmental Water Management Plan* | • Wetland birds – complete counts at wetlands, monitoring of breeding events (multiple counts required)<br>• Woodland birds – 20 min 2 ha counts (multiple counts required)<br>• Frogs – acoustic detectors with sufficient sampling to detect a significant effect of watering | Wetland birds, woodland birds and frogs at sites established through the MER within the MIA<br><br>The effect of watering is to be determined through comparison with contrasting water regimes at other VMFRP sites. | • Wetland birds – during and after every managed inundation event (up to 6 trips).<br>• Woodland birds – twice annually (spring, autumn)<br>• Frogs – acoustic detectors during and after each watering event<br><br>Monitoring to occur for at least 15 years, with continued need to be reviewed thereafter every 3 years. | Mallee CMA |
| M TE8 | To assess the response of fauna species over time | O* | Species richness, relative abundance, | Ground dwelling fauna – pitfall and funnel traps, cameras (5 | Ground dwelling fauna – within the | Spring/summer, every fifth year, of up to at | Mallee CMA |

| ID & Discipline | Performance objective | Phase | Indicator | Monitoring requirement and parameters | Locations | Frequency | Responsibility |
|---|---|---|---|---|---|---|---|
| Terrestrial ecology (Belsar) | to environmental watering (Belsar) | | recruitment, presence of threatened/notable species meets targets* for ground dwelling fauna<br><br>**Targets to be defined in the Environmental Water Management Plan* | days/nights minimum, cameras 2 weeks minimum). | Maximum Inundation Area and adjacent woodland. Reference sites to be selected to identify ground dwelling fauna (which may overlap with the sites for other fauna species). | least 15 years, to determine broader landscape-scale responses. | |
| M TE9<br><br>Terrestrial ecology | River Red-gum and Black Box condition does not deteriorate over time in areas susceptible to rising saline groundwater in response to environmental watering | O^ | • For River Red Gum trees, crown extent and/or stand condition score is the same or greater than baseline.*<br>• For Black Box trees, crown extent and/or stand condition score is the same or greater than baseline.*<br>**Baseline quadrat data collected prior to commencement of environmental watering.* | Tree condition assessment, including crown condition score either a) based on TLM method or b) crown condition index (Crome 2004).<br><br>*Note: location, frequency of sampling and specific parameters may be adjusted by the relevant water manager in response to adaptive management and existing programs.* | Mapped locations as 'high/medium risk' in EES Central Terrestrial Ecology Report: Appendix U – Survey locations for risk of hypersaline groundwater impacting Blackbox and River Red Gum. | Every three years for at least 15 years, with continued need to be reviewed thereafter every 3 years. | Mallee CMA |
| M ACH1 | Identify potential for adverse effects to Ancestral Remains and earth mounds resulting from exceedance of | O | N/A – determining baseline condition to inform contingency measures, if required. | Baseline assessment to be undertaken at Ancestral Remains and earth mound sites prior to | The locations selected for baseline assessment will be determined in the EWMP (or similar | Baseline assessment prior to each environmental watering event at applicable locations. Subsequent | Land manager<br><br>Baseline assessment to be undertaken by a person |

| ID & Discipline | Performance objective | Phase | Indicator | Monitoring requirement and parameters | Locations | Frequency | Responsibility |
|---|---|---|---|---|---|---|---|
| Aboriginal Cultural Heritage | population thresholds of pest and overabundant native species as a result of VMFRP environmental watering | | | environmental watering events. | mechanism) process using a risk-based approach that considers locations of registered Ancestral Remains and earth mound sites and Ancestral Remains predictive mapping results overlaid with areas of proposed inundation.<br><br>In addition to these sites control sites will be selected in comparable locations where environmental watering is not likely to have an effect.<br><br>Exact locations to be identified by the Land Manager in consultation with the Traditional Owners and interested parties (as applicable). | monitoring events to be undertaken as per risk-based approach outlined in EDS ACH3. | appropriately qualified in archaeology or heritage management in collaboration with the Registered Aboriginal Parties/Traditional Owners and Interested Parties (as applicable). |
| M ACH2 | Identify potential adverse effects to specific Aboriginal cultural | O | N/A – determining baseline condition to | Baseline assessment to be undertaken at Ancestral Remains | The selection of locations for baseline assessment | Baseline assessment prior to each environmental watering | Land manager |

| ID & Discipline | Performance objective | Phase | Indicator | Monitoring requirement and parameters | Locations | Frequency | Responsibility |
|---|---|---|---|---|---|---|---|
| Aboriginal Cultural Heritage | heritage values (Ancestral Remains) as a result of increased visitation as a result of VMFRP environmental watering | | inform contingency measures, if required. | sites prior to environmental watering events. | will be determined in the EWMP (or similar mechanism) process using a risk-based approach that considers locations of registered Ancestral Remains and predictive mapping results overlaid with areas of proposed inundation.<br><br>In addition to these sites control sites will be selected in comparable locations where environmental watering is not likely to have an effect.<br><br>Exact locations to be identified by the Land Manager in consultation with the Registered Aboriginal Parties/Traditional Owners and interested parties (as applicable). | event at applicable locations. Subsequent monitoring events to be undertaken as per risk-based approach outlined in EDS ACH3. | The baseline assessment must be implemented by a person appropriately qualified in archaeology or heritage management in collaboration with the Registered Aboriginal Parties/Traditional Owners and Interested Parties (as applicable). |

| ID & Discipline | Performance objective | Phase | Indicator | Monitoring requirement and parameters | Locations | Frequency | Responsibility |
|---|---|---|---|---|---|---|---|
| M ACH3<br><br>Aboriginal Cultural Heritage | Identify potential for adverse effects to Ancestral Remains and earth mounds as a result of exceedance of population thresholds of pest and overabundant native species as a result of VMFRP environmental watering | O | If monitoring (under EDS E3) identifies an exceedance of population thresholds for pest or overabundant native species, inspections of Ancestral Remains and earth mound sites to be undertaken. | This will include inspection of locations to identify effectiveness of implemented management measures (if applicable) and any change in site condition as a result of pest or overabundant native species activity in response to VMFRP environmental watering.<br><br>Reporting will include a review of the causes of any change and provide recommendations for management if justified. | As necessary at sites assessed under the baseline monitoring – | Monitoring would be required at for least one event, with the number of monitoring events to be agreed with Registered Aboriginal Parties/Traditional Owners and interested parties (as applicable) and documented in EWMP (or similar mechanism). | Land manager<br><br>The monitoring program must be implemented by a person appropriately qualified in archaeology or heritage management in collaboration with the Registered Aboriginal Parties/Traditional Owners and Interested Parties (as applicable). |
| M ACH4<br><br>Aboriginal Cultural Heritage | Identify potential for adverse effects to specific Aboriginal cultural heritage values (Ancestral Remains) as a result of increased tourism as a result of environmental watering | O | If land managers identify locations that have been accessed and shouldn't have been (due to the restrictions), additional monitoring under this contingency measure will apply. | This monitoring will include inspection of areas potentially containing Ancestral Remains to determine if there has been unauthorised access to identify effectiveness of implemented management measures (if applicable) and report on changes in site condition directly related to the watering program.<br><br>Reporting will include a review of the causes of any change and provide recommendations for management if justified. | Where necessary at sites assessed under the baseline monitoring, | Monitoring would be required at for least one event, with the number of monitoring events to be agreed with Registered Aboriginal Parties/Traditional Owners and interested parties (as applicable) and documented in EWMP (or similar mechanism). | Land manager<br><br>The monitoring program must be implemented by a person appropriately qualified in archaeology or heritage management in collaboration with the Registered Aboriginal Parties/Traditional Owners and |

| ID & Discipline | Performance objective | Phase | Indicator | Monitoring requirement and parameters | Locations | Frequency | Responsibility |
|---|---|---|---|---|---|---|---|
| | | | | | | | Interested Parties (as applicable). |
| AI ACH1<br><br>Aboriginal Cultural Heritage | Verify compliance with the CHMP | C | Compliance check with EDS requirements | Monitoring and compliance in accordance with the CHMP No. 16898 and No. 14330 as approved under the *Aboriginal Heritage Act 2006*. | As required in accordance with CHMP No. 16898 and No. 14330. | As required in accordance with CHMP No. 16898 and No. 14330.<br><br>Compliance audits to be undertaken as per the program detailed in the EMF. | Construction contractor |
| AI ACH2<br><br>Aboriginal Cultural Heritage | Verify compliance with EDS GS2 and SW1 | C | Compliance check with EDS requirements | Compliance with GS2 and SW1 | Within the Construction Footprint | Compliance audits to be undertaken as per the program detailed in the EMF. | Construction contractor |
| AI ACH3<br><br>Aboriginal Cultural Heritage | Verify compliance with EDS E3, GS3, SW2 and SW3 | O | Compliance check with EDS requirements | Compliance with E3, GS3, SW2 and SW3 | Within the Maximum Area of Inundation | Compliance audits to be undertaken as per the program detailed in the EMF. | Mallee CMA during operation |
| AI AQ1<br><br>Air quality | Minimise dust during construction | C | Dust plumes from construction activities in proximity to human sensitive receptors | Environmental inspections as detailed in the CEMP which include dust observations. | At all active construction sites | Weekly during environmental inspections | Construction contractor |

| ID & Discipline | Performance objective | Phase | Indicator | Monitoring requirement and parameters | Locations | Frequency | Responsibility |
|---|---|---|---|---|---|---|---|
| AI AQ2<br><br>Air quality | Minimise diesel emissions from pumping infrastructure | O | Pumping infrastructure involving diesel plant have not been serviced prior to installation and/or are not maintained to manufacturer specifications | Audit to check compliance with EDS AQ3 which requires all pumping infrastructure station(s) involving diesel plant to be serviced prior to installation and maintained to manufacturer specifications | Pumping infrastructure locations | Compliance audits to be undertaken as per the program detailed in the EMF. | LMW/GMW |
| AI AG1<br><br>Agriculture | Confirm implementation and effectiveness of measures implemented in EDS AG1 and assess the need for additional measures to minimise the impact of Biosecurity issues on agricultural land and farming operations during construction | C | Weed and pest control would be managed in accordance with the requirements of the CALP Act. It will be the responsibility of the construction contractor to manage waste (e.g. food scraps) and ensure the cleaning of vehicles and equipment. | Construction contractor: Weed and pest control mitigation and management strategies would be documented in the CEMP and implemented. This will include (but not limited to): maintenance of visitor registers, cleaning of plant and equipment prior to entering site, registers for import/export of material from site and site signage. | Construction footprint | Construction contractor: weekly environmental inspections. | Construction contractor |
| AI GSC1<br><br>Geology soils and contamination | Confirm implementation and effectiveness of management of use of chemicals, fuels and materials during construction and assess need for additional measures | C | Visual indicators of spills or leaks<br>Increase in concentrations of contaminants of concern between baseline and post-construction conditions.<br>Contaminants of concern would be based on the materials | During construction:<br>Inspections of spill controls and bundings, plant and equipment | Lay down areas and compounds<br>Other areas where soil or materials are handled, chemicals stored or used | Weekly inspections during construction | Construction contractor |

| ID & Discipline | Performance objective | Phase | Indicator | Monitoring requirement and parameters | Locations | Frequency | Responsibility |
|---|---|---|---|---|---|---|---|
| | | | used or stored in a specific location, to be determined in the CEMP. | | | | |
| AI GSC2<br><br>Geology soils and contamination | Confirm implementation and effectiveness of management of dispersive/sodic/unstable soils during construction as outlined in the CEMP and ESCP and assess the need for additional measures. | C | IECA Best Practice Erosion and Sediment Control 2008 | Inspections of construction work areas for indications of erosion or sediment runoff and effective application of engineering controls | Areas of excavation and soil disturbance during construction as detailed in the Erosion and Sediment Control Plan. | Construction: weekly or after a rainfall event. | Construction contractor |
| AI GSC3<br><br>Geology soils and contamination | Confirm implementation and effectiveness of management of soil related wastes during construction and assess need for additional measures | C | Compliance with the waste management hierarchy and the General Environmental Duties under the *Environment Protection Act 2017*<br>Compliance with EPA Publications 1827.2, 1828.2 and 1799.2 Classification of waste for off-site disposal or reuse against thresholds detailed in EPA Publication 1828.2 | Construction: Check compliance with EDS CM1a.<br><br>During construction, record and audit:<br>i. type and volume of soil related wastes generated and compliance with waste management procedures and consider waste elimination/reduction and opportunities for the reuse and recycling of waste.<br>ii. soil tracking system including trucking and destination tracking and sampling results. | All locations where waste generated (to be defined the CEMP) | Records kept during construction.<br>Compliance audits to be undertaken as per the program detailed in the EMF. | Construction contractor |

| ID & Discipline | Performance objective | Phase | Indicator | Monitoring requirement and parameters | Locations | Frequency | Responsibility |
|---|---|---|---|---|---|---|---|
| AI GSC4<br><br>Geology soils and contamination | Confirm implementation and effectiveness of management of use of chemicals, fuels and materials during operation and assess need for additional measures | O | Visual indicators of spills or leaks | Inspections of spill controls and bundings, plant and equipment where used. If spills observed, undertake appropriate soil sampling as detailed/required in the OEMP. | Operation: regulators and pumps where fuel or hazardous materials are stored or used | Operation: weekly during pump operation. Soil sampling as required to address spills. | LMW/GW and Mallee CMA |
| AI GSC5<br><br>Geology soils and contamination | Confirm implementation and effectiveness of management of soil related wastes during operation and assess need for additional measures | O | Compliance with the waste management hierarchy and the General Environmental Duty under the *Environment Protection Act 2017*<br>Compliance with EPA Publications 1827.2, 1828.2 and 1799.2 Classification of waste of inorganics, anions, organics and pesticides against off-site disposal thresholds and other requirements detailed in EPA Publication 1828.2 Waste disposal categories – characteristics and thresholds (2021). | During operation, record and audit:<br>i. type and volume of soil related wastes generated and compliance with waste management procedures and consider waste elimination/reduction and opportunities for the reuse and recycling of waste.<br>ii. soil tracking system including trucking and destination tracking and sampling results. | All locations where waste generated (to be defined the Operational Environment Plan) | Records kept during construction and operation.<br>Compliance audits to be undertaken as per the program detailed in the EMF. | LMW/GW and Mallee CMA |
| AI GSC5 | Confirm implementation and effectiveness of management of soil | O | Compliance with the waste management hierarchy and the | During operation, record and audit:<br>i. type and volume of soil related | All locations where waste generated (to be defined the | Records kept during construction and operation. | LMW/GMW and Mallee CMA |

| ID & Discipline | Performance objective | Phase | Indicator | Monitoring requirement and parameters | Locations | Frequency | Responsibility |
|---|---|---|---|---|---|---|---|
| Geology soils and contamination | related wastes during operation and assess need for additional measures | | General Environmental Duty under the *Environment Protection Act 2017* Compliance with EPA Publications 1827.2, 1828.2 and 1799.2 Classification of waste of inorganics, anions, organics and pesticides against off-site disposal thresholds and other requirements detailed in EPA Publication 1828.2 Waste disposal categories – characteristics and thresholds (2021). | wastes generated and compliance with waste management procedures and consider waste elimination/reduction and opportunities for the reuse and recycling of waste.<br>ii. soil tracking system including trucking and destination tracking and sampling results. | Operational Environment Plan) | Compliance audits to be undertaken as per the program detailed in the EMF. | |
| AI HH1<br><br>Historic heritage (Hattah only) | Minimise risk of harm to historical heritage values at Crawford's Home Station historical site | C | Establishment of physical barrier protection and/or exclusion zones | Checks to confirm that appropriate barrier protection or exclusion zones (as detailed in the CEMP) have been established prior to construction commencing | Crawford's Home Station historical site (VHI tbc) and Kulkyne Drop Log Stockyards | Prior to construction commencing and during weekly environmental inspections while work is being undertaken in proximity to these sites. | Construction contractor |
| AI HH2<br><br>Historic heritage | Verify compliance with EDS HH1. | C | Compliance with *Heritage Act 2017* for discovery of archaeological sites | Check compliance with EDS HH1 and specifically requirements for implementation of an unexpected archaeological finds protocol during construction. | Construction Footprint. | Compliance audits to be undertaken as per the program detailed in the EMF. | Construction contractor during construction |

| ID & Discipline | Performance objective | Phase | Indicator | Monitoring requirement and parameters | Locations | Frequency | Responsibility |
|---|---|---|---|---|---|---|---|
| AI HH3<br><br>Historic heritage | Verify compliance with EDS HH2. | O | Compliance with *Heritage Act 2017* for discovery of archaeological sites | Check compliance with EDS HH2 and specifically requirements for implementation of an unexpected archaeological finds protocol during operation. | Project area | Compliance audits to be undertaken as per the program detailed in the EMF. | Mallee CMA (in consultation with the land managers/owners) during operation |
| AI NV1<br><br>Noise and vibration | Assess timeliness and actions taken in response to noise and vibration complaints. | C | Noise or vibration complaints from sensitive receivers (e.g. residents) located near the Construction Footprint are received. | Reviews and audits of the implementation of EDS SB1 and EDS NV1. | Project area | Response to complaints or feedback as these are received in accordance with the Communications and Stakeholder Engagement Plan.<br><br>Compliance audits to be undertaken as per the program detailed in the EMF. | Construction contractor |
| AI NV2<br><br>Noise and vibration | All pumping infrastructure to be serviced prior to installation and maintained to manufacturer specifications | O | Pumping infrastructure has not been serviced prior to installation and/or are not maintained to manufacturer specifications | A register is kept outlining the details of maintenance associated service information. If this has not occurred then pump infrastructure to be serviced as soon as reasonably practicable to allow ongoing performance evaluation to be undertaken in line with the GED. | Pumping infrastructure locations | Compliance audits to be undertaken as per the program detailed in the EMF. | Mallee CMA or LMW/GMW |
| AI SB1<br><br>Social and business | Minimise the impact of the project on businesses and the community | C & O | Complaints, feedback and enquiries | Review of the implementation of EDS SB1 and SB3: | All | Construction: as specified in the Community and Stakeholder Engagement | Construction: LMW<br><br>Operation: Mallee CMA, Land |

| ID & Discipline | Performance objective | Phase | Indicator | Monitoring requirement and parameters | Locations | Frequency | Responsibility |
|---|---|---|---|---|---|---|---|
| | | | | • The nature of complaints, feedback and enquiries received<br>• Time taken to close out complaints and enquiries<br>• Whether additional actions can be taken to address persistent complaint types<br>• Where there are opportunities identified to better communicate with or engage stakeholders.<br>• Communication processes to identify whether there are opportunities to improve. | | Management Plan.<br><br>Operation: in accordance with CMA and land managers processes and procedures and Victoria's Catchment Management Authorities Community Engagement and Partnership Framework and Toolkit | managers (DEECA and Parks Victoria), LMW, GMW |
| AI TE1<br><br>Terrestrial ecology | To confirm that construction has been undertaken in accordance with EDS E1 and no unapproved vegetation is removed | C | Confirmation that no-go zones have been delineated and maintained around significant ecological values to be retained including populations of EPBC Act-listed flora (*Lepidium monoplocoides* Winged Peppercress) at Belsar-Yungera), FFG Act listed flora and Large or Very Large Trees on the edge of the Construction Footprint that are proposed to | The performance of EDSs would be evaluated by development and implementation of an auditing program (as detailed in the Native Flora and Fauna Construction Management Plan (EDS E2)) that would:<br><br>• Verify that vegetation removal is consistent with the extent of vegetation approved for removal at each site.<br>• Verify that no-go zones have been delineated and maintained to protect significant ecological values | Construction footprint | Weekly during environmental inspections | Construction contractor |

| ID & Discipline | Performance objective | Phase | Indicator | Monitoring requirement and parameters | Locations | Frequency | Responsibility |
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| | | | be retained during construction. | as listed in the indicator column. | | | |
| AI TE2<br><br>Terrestrial ecology | To avoid and minimise increased weed cover during construction | C | Weed species of management concern do not increase in abundance within the construction footprint. This includes Weeds of National Environmental Significance, weeds listed under the CaLP 1994 and those listed as FFG Act threatening processes. | Pre-construction inspections of construction sites and control of high threat weeds undertaken a minimum four weeks prior to construction.<br><br>Biosecurity check/inspections for plant material, seeds and soils containing organic matter. This applies to:<br><br>• All earth moving equipment and vehicles that have been involved in stripping and handling of topsoil prior to entering the Construction Footprint<br>• All other vehicles entering the Construction Footprint for the first time. Following this initial check, biosecurity checks not required each time the vehicle comes into the Construction Footprint if that vehicle has not travelled more than 100km from the Construction Footprint.<br>If plant material, seeds and soil is detected, clean downs on equipment and vehicles (i.e. shovel clean-down). | Construction footprint | Inspections of weeds undertaken weekly during environmental inspections | Construction contractor |

| ID & Discipline | Performance objective | Phase | Indicator | Monitoring requirement and parameters | Locations | Frequency | Responsibility |
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| AI TE3<br><br>Terrestrial ecology | To avoid and minimise increased presence of pests during construction | C | Presence of pests (i.e black rats, cats and foxes) does not increase in abundance within the construction footprint - evident through sightings (or motion sensing cameras near food disposal areas) or damage/ disturbance to construction laydown/office areas overnight). | All food to be disposed of in secured/locked bins and regularly cleared offsite.<br><br>Sightings or damage observed. | Construction footprint, focused on laydown/office areas. | Food waste disposal locations checked during weekly during environmental inspections.<br>Sightings observed. | Construction contractor |
| AI TT1<br><br>Traffic and transport | Verify compliance with EDS TT2 to avoid and minimise impacts on the road network | C | Compliance with the TMP (EDS TT2) | Audit of compliance with EDS TT2 (Traffic Management Plan). | Road networks within project areas including haulage routes as detailed in the Traffic Management Plan | Compliance audits to be undertaken as per the program detailed in the EMF. | Construction contractor |
| AI TT2<br><br>Traffic and transport | Assess impact on pavement condition of public roads. | C | Pavement condition survey | Construction site manager to undertake audits on pavement conditions as detailed in the TMP | Roads and tracks used by construction vehicles for the project including haulage routes (as defined in the Traffic Management Plan). | Prior to, during and at completion of construction as detailed in the Traffic Management Plan | Construction contractor |
| I GSC1 | Confirm suitability of soil for use | C | EPA Publication 1828.2 Fill material upper limits<br>NEPM 2013 screening | As required in EDS CM1b, detailed characterisation (sampling) of material that will be imported for use in construction | Borrow sites and other material source sites (if any). | Characterisation: prior to commencing | Construction contractor |

| ID & Discipline | Performance objective | Phase | Indicator | Monitoring requirement and parameters | Locations | Frequency | Responsibility |
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| Geology soils and contamination | | | criteria relevant for protection of human health (HIL and HSL C – public open space land use) and ecological receptors (EIL and ESL for Areas of Ecological Significance)<br>EPA Publication 655.1 Table 3: Texture based action criteria for classification of acid sulfate soil.<br><br>Specific parameters to be assessed include heavy metals, pesticides, herbicides, asbestos, hydrocarbons, acid sulfate soils and geotechnical properties. | in accordance with the sampling densities identified in EPA Publication IWRG701: Sampling and analysis of waters, wastewaters, soils and wastes and EPA Publication 655.1 Acid sulfate soil and rock or equivalent as updated EPA publications are forthcoming. | | construction (once off if investigation sufficient) | |
| I GSC2<br><br>Geology soils and contamination | Confirm presence/absence of acid sulfate soils | C | Field screening and quantitative laboratory analysis, for example chromium reducible sulfur to determine levels in accordance with EPA Publication 655.1 Acid sulfate soil | As required by EDS CM2, undertake soil samples at selected locations as identified in the acid sulfate soil management plan (ASMP).<br><br>The ASMP must outline processes and procedures for identifying, reducing and minimising | Locations to be identified in the ASMP | To be detailed in the ASMP. Collection of samples prior to construction. | Construction contractor |

| ID & Discipline | Performance objective | Phase | Indicator | Monitoring requirement and parameters | Locations | Frequency | Responsibility |
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| | | | | disturbance and oxidation of acid sulfate soils during construction. | | | |

# Glossary

| Term | Definition |
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| **Adaptive management** | An iterative process of developing a conceptual model and management hypothesis and then implementing management actions and monitoring to identify which management actions are most effective at achieving specified objectives. Adaptive management incorporates planning, management, monitoring and evaluation mechanisms to allow waterway managers to adjust their approach in response to current climatic conditions, new information and local knowledge when planning for the future.<br><br>Adaptive management would be implemented during operation to ensure changes in management actions are most effective at achieving the identified benefits of the projects. |
| **Area of Investigation** | The area which includes the proposed Construction Footprint plus a variable buffer width beyond the Construction Footprint. Greater buffer widths have been included for larger structures such as pump stations, culverts and regulators.<br><br>The Area of Investigation defines the area within which physical site information (existing conditions) has been collected to:<br><br>determine the potential direct adverse effects of construction activity for applicable specialist assessments; and<br><br>ensure that sufficient data is collected to enable refinements to project footprints to be made to further avoid or reduce adverse effects. |
| **Basin Plan** | Passed into law in November 2012 under the *Water Act 2007* (Cth), the Murray-Darling Basin Plan ('the Basin Plan') aims to restore the Murray-Darling Basin back to a healthier and more sustainable state while continuing to support farms and other industries that benefit local communities. The Basin Plan is managed by the Murray-Darling Basin Authority, which was established by the *Water Act 2007* to coordinate water resources within the Basin. |
| **Blackwater** | Blackwater can occur when there is pooling of water on the floodplain or in inundated wetlands and large amounts of organic material (from leaves, grasses, twigs, bark etc) are leached into the ponded water. This organic material is high in dissolved organic carbon (DOC) and nutrients that are rapidly decomposed by bacteria and fungi. This consumes oxygen dissolved in the water more rapidly than replenishment can occur from the atmosphere or from well oxygenated inflowing water. The resultant water takes on a black appearance and in extreme cases the reduction in dissolved oxygen can lead to hypoxic conditions (depleted dissolved oxygen) and potential death of aquatic organisms. This is typically referred to as a 'fish kill' but can also adversely impact other aquatic organisms (such as invertebrates, crustaceans and molluscs) that rely on sufficient dissolved oxygen in the water column to survive. Blackwater is a natural occurrence and not all blackwater events lead to 'fish kills'. |
| **Borrow site** | A shallow quarry located in proximity to the work sites that is used to source fill materials for the projects. |
| **Cofferdam** | A structure constructed within a body of water that retains water and soil and allows the enclosed area to be pumped out and excavated dry. The pumping creates a dry |

| Term | Definition |
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| | working environment so that the work can be carried out safely and minimise potential environmental impacts. |
| **Commissioning** | **Commissioning** is the process of testing infrastructure (e.g., opening and shutting gates on regulators or briefly operating a pumping station) prior to operations to ensure that it operates as designed.<br><br>**Dry commissioning** is the process of undertaking commissioning activities during dry conditions (i.e., without water). The risks associated with dry commissioning are similar to the risks associated with the construction phase and have been assessed as part of the construction phase.<br><br>**Wet commissioning** is the process of undertaking commissioning activities during wet conditions (i.e., with water). The risks associated with wet commissioning are similar to the risks associated with the operations phase and have been assessed as part of the operations phase. |
| **Commonwealth Environmental Water Office (CEWO)** | The CEWO holds and manages Commonwealth Environmental Water Holdings in accordance with the requirements of the Basin Plan. The office is responsible for the delivery of water for the environment between Basin States. |
| **Construction compound** | A temporary area used as a base for construction activities, including for the storage and assembly of plant, equipment and materials, provision of construction site offices, workshops and worker facilities, and parking vehicles. |
| **Construction contractor** | A firm or individual appointed to provide professional construction or related services. |
| **Construction Environmental Management Plan** | The Construction Environmental Management Plan details the roles, responsibilities, procedures and actions to be implemented during construction of the projects to ensure compliance with (at a minimum) the requirements of all relevant environmental laws, approvals, approval conditions and the Environmental Delivery Standards. This plan would incorporate appropriate sub-plans to manage aspects with higher environmental risks (such as a Native Flora and Fauna Management sub-plan). |
| **Construction Footprint** | The area of land required for construction of the project. The Construction Footprint includes all infrastructure and associated construction activities, including laydown areas, site compounds, workforce facilities, site access and borrow sites. |
| **Construction laydown areas** | Areas within the Construction Footprint for storage of construction materials, facilities for workforce and parking. The location of the laydown areas will be selected to minimise adverse impacts (e.g., avoid tree protection zones where practicable). |
| **Containment bank** | A raised embankment, predominantly constructed using earthfill to contain environmental water on the floodplain and prevent unintended flooding. A containment bank may serve as the location of a road or access track. |
| **Contamination** | The condition of land or water where any chemical substance of waste has been added as a direct or indirect result of human activity at above background level and represents, or potentially represents, an adverse health or environmental impact (as defined in the *National Environment Protection (Assessment of Site Contamination Measure 1999).* |
| **Contaminated land (as taken from the** | 1. Subject to subsection 2., land is contaminated if waste, a chemical substance or a prescribed substance is present on or under the surface of the land, and the waste, chemical substance or prescribed substance— |

| Term | Definition |
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| ***Environment Protection Act 2017*)** | (a) is present in a concentration above the background level; and (b) creates a risk of harm to human health or the environment.<br><br>2. Land is not contaminated—<br><br>(a) merely because waste, a chemical substance or a prescribed substance is present in a concentration above the background level in water that is on or above the surface of the land; or<br><br>(b) if any prescribed circumstances apply to the land. |
| **Culvert** | A drainage tunnel carrying a stream or open drain under a road, access track or similar obstruction. A culvert may be made from reinforced concrete or other material.<br><br>Culverts allow for the transport of water whilst maintaining access across them. |
| **Decommissioning** | The process of removing infrastructure from operation when it is no longer required. Decommissioning may include the removal of works and infrastructure and rehabilitation works. |
| **Dewatering** | Dewatering is the action of removing groundwater or surface water during construction. Normally dewatering occurs by pumping or otherwise removing water from a construction site to lower the water level to facilitate excavation or other construction activities. |
| **Ecological Vegetation Class (EVC)** | EVCs are the standard unit for classifying native vegetation types in Victoria. An EVC is described through a combination of floristics, lifeforms and ecological characteristics and through an inferred fidelity to particular environmental attributes. Each EVC includes a collection of floristic communities that occurs across a biogeographic range, and although differing in species, have similar habitat and ecological processes operating. |
| **Ecological Water Regime Class (EWRC)** | EWRCs were developed using sources where available, such as LiDAR, historical hydrological modelling, DELWP 2005 modelled EVC layer, ground truthing and EVC mapping, and represent the hydrological requirements of vegetation that is expected to be present under a natural flooding regime. The water requirements of the EWRC classification were guided by a comprehensive synthesis of Rogers and Ralph (2010) on the water needs of EVC foundation species and SDLAM hydraulic modelling.<br><br>EWRCs are the ecological framework used by VMFRP to govern and inform the Project Description and Benefits, Planning and Operational Delivery components including Restoration Objectives, the 'Watering Needs' knowledge underpinning these objectives and the VMFRP 'Operating Scenarios' that will deliver watering needs (regimes) that will achieve VMFRP Objectives. |
| **Environmental Delivery Standard (EDS)** | Environmental Delivery Standards set out the environmental management measures and standards that will apply to enable the benefits of the projects to be achieved whilst avoiding, minimising and appropriately managing potential impacts. This includes mitigation measures, consultation requirements and performance management to minimise potential impacts and risk of harm to human health and the environment, so far as reasonably practicable having regard to delivery of project benefits. |
| **Environmental entitlement** | A legal right to water granted by the Minister for Water under the *Water Act 1989* for the purpose of maintaining an Environmental Water Reserve or improving the environmental values and health of the water ecosystems and other users that depend on environmental condition. |

| Term | Definition |
|---|---|
| | It provides the right to take or store a volume of water subject to conditions. Environment entitlements are held by the Victorian Environmental Water Holder. |
| **Environment Reference Standard (ERS)** | ERSs are made under the *Environment Protection Act 2017* and are used to assess and report on environmental conditions in the whole or any part of Victoria. |
| **Environmental water** | Water sourced through environmental entitlements that is used or managed to improve or maintain the health of rivers, wetlands and floodplains. |
| **Environmental Water Management Plan** | An Environmental Water Management Plan will be prepared by the waterway manager and details how the operation of the water regime of the projects would be managed. It provides a framework for water planning, delivery, monitoring and consultation processes and would be responsive to changing water resource conditions, opportunities and environmental priorities. |
| **Fishway** | Any structure or facility made to facilitate or provide passage for fish over a natural or artificial barrier or obstruction. |
| **Flood operation** | During a flood event project infrastructure located in flood paths will remain open in 'flood operation' mode to allow flows to occur. |
| **Hardstand** | An area that is compacted flat with gravel or paved with concrete or asphalt. It can be used for parking heavy vehicles, location of temporary pumps or for other temporary structures such as compounds.<br><br>Hardstand can be temporary (for construction purposes that would be removed upon completion of works) or permanent. |
| **Infrastructure** | General term to collectively describe all works and physical structures to be delivered as part of the projects. Infrastructure may include new regulators and modification of existing regulators, raised tracks and banks, culverts, spillways and drop structures, pump stations (temporary or permanent), hardstands, and pipelines and channels designed to deliver and retain water on the floodplain, along with construction works for new and upgraded access tracks required to facilitate construction of the VMFRP. |
| **Infrastructure footprint** | The area of land that is proposed to be subject to infrastructure as part of the projects. |
| **Inundation** | The deliberate flooding of land as part of the projects. |
| **Land manager** | For public land, the land manager is the Minister, government department, public authority or municipal council having responsibility for the care or management of that public land.<br><br>For private land, the land manager is the private owner or person having responsibility for the care and management of that land. |
| **Levee** | A natural or artificial wall or embankment that restricts the flow of water and prevents flooding of a particular area. They are used as flood protection and to retain water to floodplain areas. |
| **Lock** | Locks are employed next to regulators to enable boats to move through the graded waterway. The water level in a Lock can be raised or lowered in line with the upstream and downstream water levels. |
| **Managed inundation** | Inundation of a specific location using environmental water to achieve pre-determined ecological objectives. Delivery of environmental water may occur before |

| Term | Definition |
|---|---|
| | or in addition to a natural flood event, taking advantage of the naturally wetted conditions to extend the duration or extent of inundation. |
| **Maximum Inundation Area** | The maximum area that is able to be inundated by the proposed works based on the design of the project. Inundation of private land would only occur subject to private flood agreements being established for the relevant land |
| **Monitoring, Evaluation and Reporting Plan** | A plan which provides the framework, variables and triggers for monitoring and evaluating the delivery and outcomes of environmental water across the projects. |
| **Murray River floodplain** | An area of low-lying ground adjacent to the Murray River, which is subject to flooding. |
| **Natural flood** | A flood event resulting from natural rainfall. |
| **Operating Plan** | The Operating Plan provides a framework for operating the project infrastructure to meet key ecological objectives and comply with relevant legislation and is prepared by the waterway manager. The Operating Plan sets out governance and operational arrangements for the project infrastructure, including how the infrastructure works and how it is intended to be operated. It informs the Operations and Maintenance Plan. |
| **Operating scenario** | The parameters for managed inundation events as part of the projects that will result in the desired timing, duration and extent of environmental watering to meet the ecological needs of the floodplain. |
| **Operation** | Operation, also known as the operational phase, refers to the period of project operation and is the longest stage of the project lifecycle and includes the maintenance of infrastructure. |
| **Operations and Maintenance Plan** | The Operations and Maintenance Plan will be prepared by the asset owner and operator and sets out a framework for operation of the water management assets for the projects. This document includes roles and responsibilities for site work operation, outlines operating control limits and information on day-to-day procedures for preparing, conducting and reporting on activities carried out. |
| **Operation Environment Management Plan** | The Operation Environmental Management Plan contains details of the responsibilities, procedures and actions to be implemented during operation and maintenance activities across all involved agencies, to ensure compliance with (at a minimum) the requirements of all relevant environmental law, approvals, approval conditions and the Environmental Delivery Standards. |
| **Pest animal** | Under the *Catchment and Land Protection Act 1994* (Part 8; Section 64), the Minister for Agriculture declares certain animals as pest animals in Victoria.<br><br>Invasive pest animals threaten and impact Victorian farms, parks, forests, waterways, biodiversity, and catchment assets. |
| **Pest plant** | Under the *Catchment and Land Protection Act 1994* (Part 8; Section 60-63), the Minister for Agriculture declares certain plants as noxious weeds (pest plants) in Victoria.<br><br>Invasive pest plants threaten and impact primary production and biodiversity. |
| **Pipeline** | An enclosed pipe used to convey water from one location to another. Permanent pipelines may be required to move water to lower ground or throughout the project area for the projects. |

| Term | Definition |
|---|---|
| **Project area** | The project area includes the Maximum Inundation Area and Construction Footprint required for the projects. |
| **Pool level** | Height of water behind a water retaining structure, normally expressed as meters Australian Height Datum (mAHD). |
| **Regulator** | A structure used to deliver, move or retain water on the floodplain to facilitate the environmental watering regime (e.g., volume and duration of flood water). The various regulator sizes include:<br><br>*Very large* – major regulator structures on large waterways that will require individual design. They typically are multi-bay structures of more than 3-4m height with bridge crossings for access and will be designed as cast in situ concrete structures with sheetpile cut offs for seepage control. Some will require piled foundations for structural support and some will have fishways<br><br>*Large* – intermediate sized regulator structures nominally 2-3m in height with some degree of individual design of the structure required. They will typically have box culverts for the road crossing but the remainder will be cast in situ concrete, typically with sheet pile cut offs for seepage control<br><br>*Small* – control regulators that retain water less than 2m deep. The small regulators generally comprise box culvert style regulators with box culvert units up to 1.8m high, and variations of these. Non-standard small regulators consist of small irrigation type flow control structures.<br><br>Some regulators will be operated so that fish passage (targeting small bodied fish) can occur both in managed release and natural flood scenarios and flow velocities are also appropriate for fish passage. |
| **Road (see also track or access track)** | Refers to existing Council or State managed public roads, comprised of formalised sealed or unsealed pavement structures consisting of a prepared subgrade with base and / or subbase layers. |
| **Seasonal Watering Plan** | The Seasonal Watering Plan describes State-wide priorities for environmental water use in the coming year based on submissions of Seasonal Watering Proposals to the Victorian Environmental Water Holder. |
| **Seasonal watering proposal** | Seasonal Watering Proposals are submitted to the Victorian Environmental Water Holder and describe the environmental water requirements under priorities for environmental water use in the coming year under a range of climatic scenarios to protect or improve environmental values and health. |
| **Site access** | A point of vehicle or pedestrian access to the project area from surrounding land via existing roads and tracks where available. In some cases, new or modified access tracks, turning circles and / or passing bays will be required. |
| **Spillway** | Hydraulic structures built to divert or control the release of flood waters.<br><br>Spillways have been incorporated into some containment banks or integrated with regulator structures to control overflow during a natural or managed flood event. |
| **Technical Reference Group (TRG)** | A TRG, such as that appointed for the VMFRP, is normally established for a project specifically to advise on the preparation of an EES and includes representatives from State and Commonwealth agencies, registered Aboriginal parties and local councils. The TRG advises the proponent on:<br><br>• relevant policy, strategies and statutory provisions<br>• the design and adequacy of the specialist assessments for the EES |

| Term | Definition |
|---|---|
| | • public information and stakeholder consultation programs<br>• responses to issues arising from the specialist assessments<br>• technical adequacy and completeness of draft EES documents<br>• coordination of statutory processes. |
| **Threshold** | For water – A water height, or flow that defines a critical limit for transition in operational conditions.<br><br>For ecology – A time or ecological health condition that defines a critical limit for transition in ecological conditions. |
| **The Basin States** | The Basin States refers to the five states that signed the Murray-Darling Basin Plan in 2012; Queensland, New South Wales, Victoria, South Australia and the Australian Capital Territory. |
| **The Living Murray (TLM) program** | An environmental works project established in 2002 in response to concerns about the environmental health of the Murray River and its floodplains. The TLM program aims to improve the environmental health of six icon sites that were chosen for their significant values.<br><br>The six icon sites include the Barmah–Millewa Forest, Gunbower–Koondrook–Perricoota Forests, Hattah Lakes, Chowilla Floodplains and Lindsay–Wallpolla–Mulcra Islands, Lower Lakes, Coorong and Murray Mouth and River Murray Channel.<br><br>The TLM program has recovered 500 GL of environmental water and has constructed water management structures to enable the efficient and effective use of environmental water. |
| **Track or access track** | Refers to public access tracks in National Parks, State Forests or reserves and on private land. |
| **Victorian Environmental Water Holder (VEWH)** | The VEWH is responsible for holding and managing Victoria's Water Holdings and works closely with the CEWO to coordinate the delivery of environmental water in Victoria. The VEWH coordinates the use of environmental waters with other States and the Commonwealth. |
| **Water Management Area** | Part of the Maximum Inundation Area that is used to manage an inundation event. Each Water Management Area has a different target inundation water level and inundation of several Water Management Areas may be coordinated to extend the inundation and increase the environmental benefits by reusing water. |
| **Water regime** | The prevailing pattern of flows in a waterway, floodplain or wetland over time that will influence the response and persistence of plants, animals and their ecosystems environmental values. The key components of the water regime include timing, frequency, duration, magnitude and depth and salinity of inundation. |

# Abbreviations

| Abbreviation | Definition |
|---|---|
| **AHD** | Australian Height Datum |
| **CEMP** | Construction Environmental Management Plan |
| **CEWH** | Commonwealth Environmental Water Holder |
| **CHMP** | Cultural Heritage Management Plan |
| **CMA** | Catchment Management Authority |
| **DCCEEW** | Department of Climate Change, Energy, the Environment and Water.<br><br>Note: On 1 July 2022, the government announced Machinery of Government changes that affect this department – the Department of Agriculture, Water and Environment (DAWE) became the Department of Agriculture, Fisheries and Forestry.<br><br>The environment and water portfolio, now resides within the Department of Climate Change, Energy, the Environment and Water (DCCEEW). |
| **DEECA** | Victorian Department of Energy, Environment and Climate Action |
| **EDS** | Environmental Delivery Standard |
| **EE Act** | *Environment Effects Act 1978* (Vic) |
| **EES** | Environment Effects Statement under the *Environment Effects Act 1978* |
| **EMF** | Environmental Management Framework |
| **EMS** | Environmental Management System |
| **EPA** | Environment Protection Authority (Victoria) |
| **EPBC Act** | *Environment Protection and Biodiversity Conservation Act 1999* (Cth) |
| **EVC** | Ecological Vegetation Class |
| **EWMP** | Environmental Water Management Plan |
| **FFG Act** | *Flora and Fauna Guarantee Act 1988* (Vic) |
| **FPSR** | First Peoples State Relations |
| **GL** | Gigalitres |
| **GMW** | Goulburn-Murray Water |
| **ha** | Hectares |
| **LMW** | Lower Murray Water |
| **LPP** | Local Planning Policies |
| **Mallee CMA** | Mallee Catchment Management Authority |
| **MDBA** | Murray-Darling Basin Authority |
| **MER** | Monitoring, Evaluating and Reporting |

| | |
|---|---|
| **ML** | Megalitres |
| **MNES** | Matters of National Environmental Significance |
| **North Central CMA** | North Central Catchment Management Authority |
| **OEMP** | Operation Environmental Management Plan |
| **P&E Act** | *Planning and Environment Act 1987* (Vic) |
| **RAP** | Registered Aboriginal Party |
| **SDLAM** | Sustainable Diversion Limit Adjustment Mechanism (Murray-Darling Basin Plan) |
| **TLM** | The Living Murray |
| **TRG** | Technical Reference Group |
| **TO** | Traditional Owner |
| **VEWH** | Victorian Environmental Water Holder |
| **VHI** | Victorian Heritage Inventory |
| **VHR** | Victorian Heritage Register |
| **VMFRP** | Victorian Murray Floodplain Restoration Project |

# References

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VEWH (2015) What does environmental watering involve? *https://wcma.vic.gov.au/wp-content/uploads/2022/04/4.2.04-FS04_What-does-environmental-watering-involve_SWP_FS.pdf, accessed 12/05/2025)*

VEWH (2022) How do we know if Environmental Watering is successful? *https://www.vewh.vic.gov.au/__data/assets/pdf_file/0005/342536/4.2.05-FS05_How-do-we-know-if-environmental-watering-is-successful_ SWP_FS.pdf*, last accessed 26/04/22

# Appendix A. Project Descriptions

This appendix provides a brief description of the project elements and key construction and operational activities covered by the EMF. Further detail is provided in the EES *Chapter 6 Project Description* available online here:

- https://caportal.com.au/vmfrp/projects/hattah-belsar/ees

## A.1. Project Overview

### A.1.1 Belsar-Yungera

The Belsar-Yungera project is located in north-west Victoria near Robinvale, in the Lake Powell district, approximately 30km upstream of Euston Weir. The Belsar-Yungera project area comprises the Construction Footprint (which contains the proposed infrastructure) and the Maximum Inundation Area and is shown in Figure A.2.

The Belsar-Yungera project is located in an area where Traditional Owners and Aboriginal parties and / or organisations have not been formally recognised under relevant legislation (either as a Registered Aboriginal Party (RAP) under the *Aboriginal Heritage Act 2006* (Victoria), by a determination under the *Native Title Act 1993* (Commonwealth), or a Recognition Settlement Agreement under the *Traditional Owner Settlement Act 2010* (Victoria)).

The Belsar-Yungera project would involve works to facilitate inundation of approximately 2,374ha of high ecological value Murray River floodplain (refer to the project area in Figure A.2). The Belsar-Yungera project is located almost entirely in the Rural City of Swan Hill and the Mallee Catchment Management Area (Mallee CMA) region, with the exception of the temporary suction line which during pumping events, will be located on the bank of the Murray River within New South Wales, and therefore within Balranald Shire local government area.

### A.1.2 Hattah Lakes North

The Hattah Lakes North project is located on the western side of the Murray River in north-west Victoria, between Robinvale and Red Cliffs, approximately 75km south of Mildura. The Hattah Lakes North project area, which includes the Construction Footprint, Maximum Inundation Area and proposed infrastructure, is shown in Figure A.4.

The Hattah Lakes North project is located in an area where Traditional Owners and Aboriginal parties and / or organisations have not been formally recognised under relevant legislation (either as a RAP under the *Aboriginal Heritage Act 2006* (Victoria), by a determination under the *Native Title Act 1993* (Commonwealth), or a Recognition Settlement Agreement under the *Traditional Owner Settlement Act 2010* (Victoria)).

The Hattah Lakes North project will involve works to support the inundation of approximately 1,130ha of high ecological value Murray River floodplain, including the Chalka North and Lake Boolca Water Management Areas. The Hattah Lakes North project is located entirely in the Rural City of Mildura local government area and the Mallee CMA region (refer to Figure A.4).

## A.2. Operation

Operation of the projects would consist of three key components, used to guide adaptive management of the ecological needs of the floodplain:

- Water Management Areas – a delineated area used to manage surface water, defined by physical boundaries such as topography and physical structures (such as containment banks)
- Infrastructure – the physical structures to be delivered as part of VMFRP
- Operating Scenarios – used to deliver environmental water at different frequencies and durations to meet the hydrological requirements for high value floodplains. The scenarios are devised to meet the inundation requirements of the Ecological Water Regime Classes / Ecological Vegetation Classes (EVC) present on the floodplains.

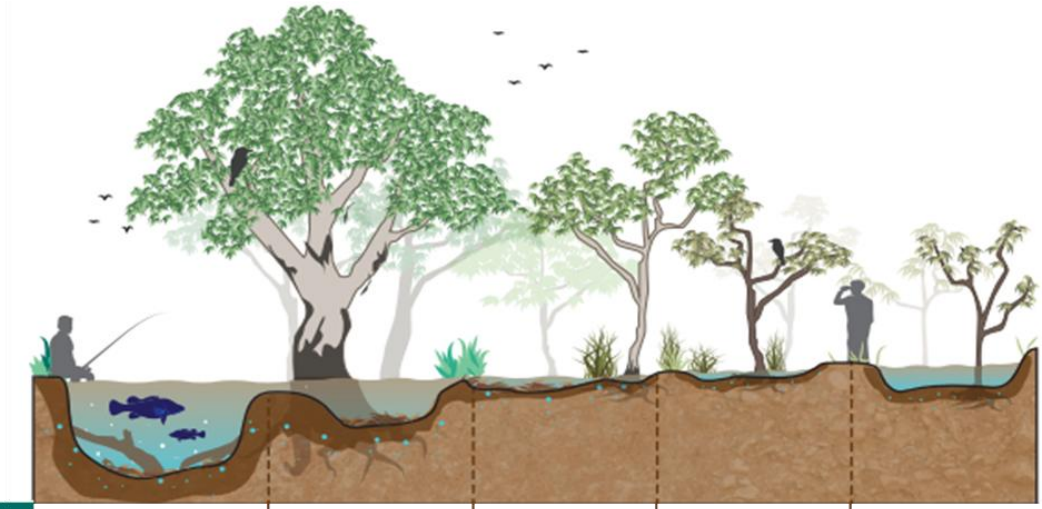
### A.2.1 Belsar-Yungera

The key components for the Belsar-Yungera project are listed in Table A.1, and mapped in Figure A.2.

**Table A.1: Key components for the Belsar-Yungera project**

| **Components** | |
|---|---|
| Water Management Areas | • Water Management Area 1<br>• Water Management Area 2<br>• Water Management Area 3<br>• Water Management Area 4. |
| Infrastructure | • One very large regulator incorporating a vertical slot fishway (ER1)<br>• Two large regulators (ER3 and S7)<br>• 14 small regulators<br>• Two culverts<br>• 1.6km of containment banks with access tracks on top<br>• A 2km low-pressure below-ground pipeline<br>• Four permanent hardstands (for temporary pumps to transfer environmental water from the Murray River into the Narcooyia Creek, as required)<br>• Upgrades to existing access track and roads (approximately 11.1km)<br>• Creation of new access tracks and roads (approximately 12.8km)<br>• Use of existing tracks, including maintenance activities during operation (approximately 24.4km)<br>• Decommissioning and removal of the existing block bank on the Narcooyia Creek. |
| Operating Scenarios | • Default (which is with the project infrastructure in place but not operating to provide inundation)<br>• Seasonal Fresh<br>• Belsar Intermediate<br>• Belsar Maximum<br>• Belsar Maximum and Lakes Powell and Carpul<br>• Natural inundation / Flood Operation. |

Figure A.1 illustrates the relationship between the Ecological Water Regime Classes and the operational scenarios.



| Ecological Water Regime Class | Watercourses | Semi-permanent Wetlands | Red Gum Forest & Lignum Shrubland | Black Box Woodland | Floodplain Lake |
|---|---|---|---|---|---|
| Operating scenario | Seasonal Fresh | Belsar Intermediate | Belsar Intermediate Belsar Maximum | Belsar Maximum | Belsar Maximum and Lakes Powell and Carpul |
| River flows equivalent (ML/d) | 10,000 | 30,000 | 40,000 - 50,000 | 100,000 | 170,000+ |

**Figure A.1: Conceptual model of Ecological Water Regime Classes and operation scenarios for the Belsar-Yungera project**

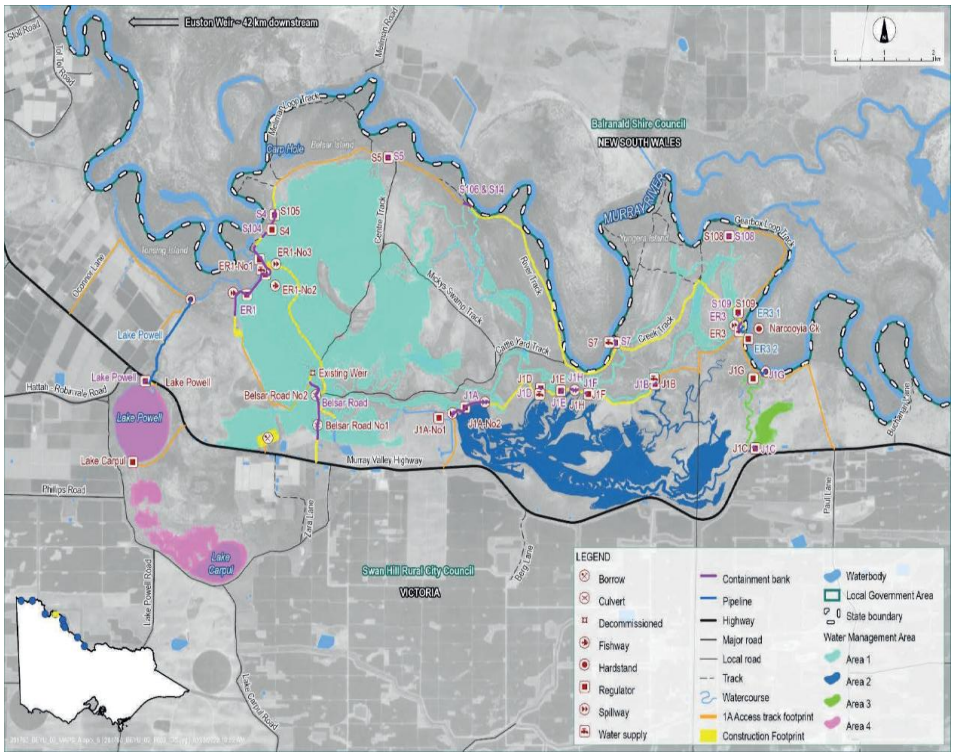



**Figure A.2: Project map for the Belsar-Yungera project**

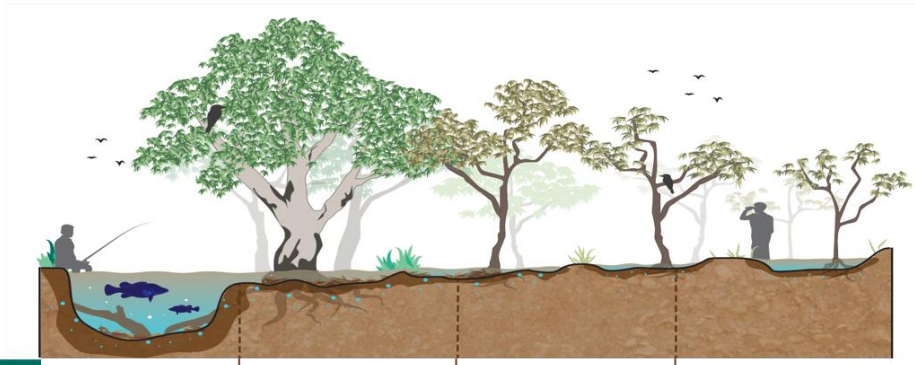
### A.2.2 Hattah Lakes North

The key components for the Hattah Lakes North project are listed in Table A.2 and mapped in Figure A.4.

**Table A.2: Key components for the Hattah Lakes North project**

| Components | |
|---|---|
| Water Management Areas | • Chalka North Water Management Area<br>• Lake Boolca Water Management Area. |
| Infrastructure | • One large regulator (K10)<br>• One small regulator (Bitterang Regulator)<br>• One containment bank (K10 River Track Containment Bank)<br>• 1.8km of containment banks with access tracks on top<br>• Use of existing access tracks, including maintenance activities during operation (approximately 16.9km). |
| Operating Scenarios | • Natural inundation / Flood operation<br>• Flood plus intervention<br>• Retention in Hattah North area (Chalka North Water Management Area only)<br>• Managed inundation – gravity release (Lake Boolca Water Management Area only)<br>• Managed inundation – pumped (Lake Boolca Water Management Area only). |

Figure A.3 illustrates the relationship between the Ecological Water Regime Classes and the operational scenarios.



| Ecological Water Regime Class | Murray River | Red Gum Forest & Woodland | Black Box Woodland | Episodic Wetland |
|---|---|---|---|---|
| Operating scenario – Chalka North Water Management Area | Not applicable | • Flood operation<br>• Flood plus intervention<br>• Retention in Hattah North area | • Flood operation<br>• Flood plus intervention<br>• Retention in Hattah North area | N/A |
| Operating scenario – Lake Boolca Water Management Area | Not applicable | Not applicable | • Flood operation<br>• Flood plus intervention<br>• Managed inundation – gravity release<br>• Managed inundation – pumped. | • Flood operation<br>• Flood plus intervention<br>• Managed inundation – gravity release<br>• Managed inundation – pumped. |
| River flows equivalent (ML/d) | Not applicable | 80,000 | 120,000 | 140,000+ |

**Figure A.3: Conceptual model of Ecological Water Regime Classes and operational scenarios for the Hattah Lakes North project**

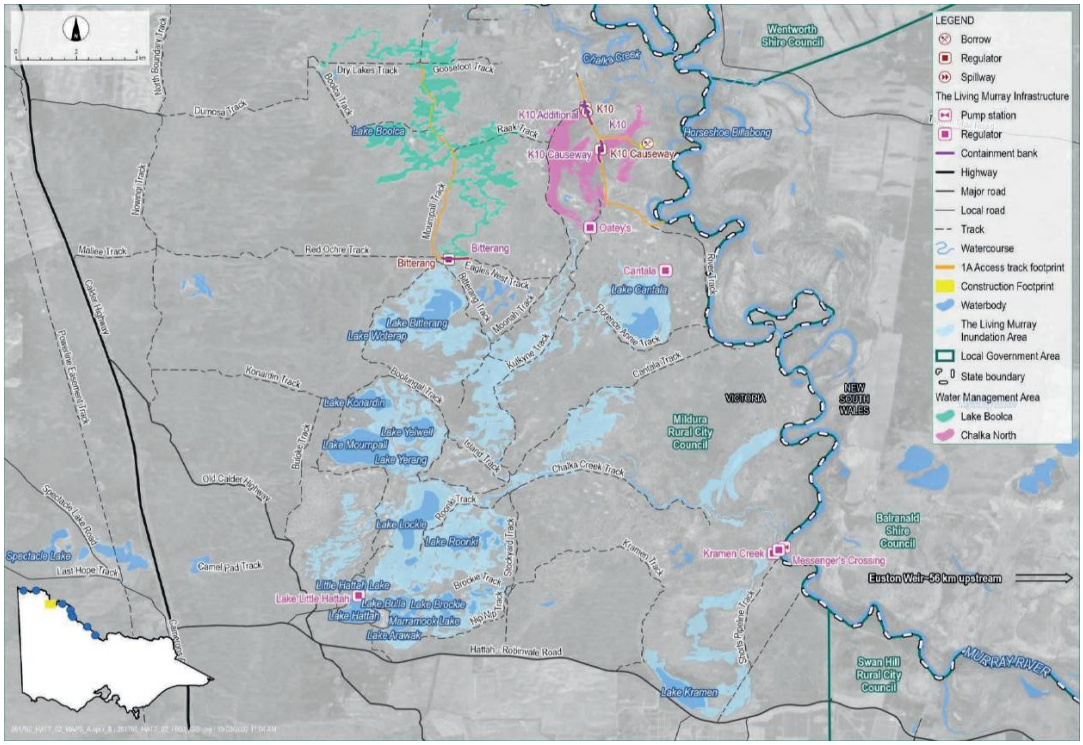



**Figure A.4: Project map for the Hattah Lakes North project**

## A.3. Construction

A Construction Footprint has been developed to guide the assessment of the potential impacts of the project. The Construction Footprint covers 52ha at the Belsar-Yunger project and 31ha at Hattah Lakes North project (shown in Figure A.2 and Figure A.4) and includes all infrastructure and associated construction activities, including laydown areas, site compounds, and workforce facilities, upgrades to site access and borrow sites. The proposed Construction Footprint comprises the following:

- A working area to accommodate the movement of construction vehicles and machinery and provide storage for equipment and materials comprising:
    - Generally up to 20m from proposed structures such as regulators (with the exception of the three regulators at Hattah Lakes North which have larger buffers up to 120m)
    - Generally up to 3m from containment banks, laydown areas and minor work sites around the proposed infrastructure (with the exception of three containment banks at Hattah Lakes North which have larger buffers between 15m and 32m)
    - Generally up to 40m from borrow pits
- Roads and/or access tracks to be constructed and/or to be upgraded as part of the projects would typically require a minimum 2m buffer on either side of the total road width to allow for construction works. In addition, turning circles of 30m width on some access roads for large vehicles have also been included in the Construction Footprint.

The Belsar-Yungera and Hattah Lakes North projects involve the following construction activities:

- Confirmation of the final Construction Footprint
- Preparatory works
- Earthworks
- Civil and structural works
- Reinstatement and rehabilitation
- Dry commissioning.

Construction of the projects is planned to commence in the first half of 2023, with construction taking approximately 18 months to complete. Construction would take into account high flow periods, to ensure that instream works are avoided at this time. The construction program would be further developed with early construction contractor involvement during detailed design.