



**VICTORIAN MURRAY FLOODPLAIN
RESTORATION PROJECT**
HEALTHY LANDSCAPES, STRONG COMMUNITIES

Environmental Management Framework

Vinifera Floodplain Restoration Projects

Nyah Floodplain Restoration Projects

(C78swan Incorporated Document – condition 4.5)



Environmental Management Framework	1
1 Introduction	1
2 Incorporated Document	3
3 Governance framework	5
3.1 The Victorian Murray Floodplain Restoration Project	5
3.2 The Vinifera and Nyah projects	5
3.3 Roles and responsibilities	6
3.4 Regulatory authorities	6
4 Statutory approvals and consents	10
4.1 General environmental duties	12
5 Risk assessment and assessment of effects	13
6 Environmental management documentation	14
7 Operation	17
7.1 Roles and responsibilities (operation)	17
7.2 Environmental watering process	23
7.3 Environmental management documentation (operation)	27
7.4 Operational performance management	34
7.5 Process, timing and consultation for operational documentation	41
8 Construction	42
8.1 Roles and responsibilities (construction)	42
8.2 Environmental management documentation (construction)	45
8.3 Construction performance management	49
8.4 Process, timing and consultation for the strategies, plans and sub-plans	51
9 Change management	51
10 Consultation	53
11 Environmental Delivery Standards	11.55
12 Monitoring program	12.90

Quality Information

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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 Vinifera and Nyah 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 for Vinifera and Nyah¹, this final EMF is based on Chapter 20 of the exhibited Environment Report (ER) for the projects, and has been updated to incorporate both the Minister's recommendations and the specific requirements of the C78swan Incorporated Document. Furthermore, and consistent with the Minister's assessment for the Burra Creek project² (the third project presented within the Environment Report), Amendment C78swan did not apply to the Burra Creek project, and therefore this EMF applies only to Vinifera and Nyah.

This Framework outlines clear accountabilities for the delivery and operation of the Vinifera and Nyah 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 will be appropriately managed, and that the benefits will be realised for the Vinifera and Nyah 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 forming part of the Environment Report.

This Framework specifies the environmental management process which will be implemented during the design, construction, commissioning and operation of Vinifera and Nyah projects. It outlines the existing management systems and procedures, as well as the processes to be followed in the preparation, review, approval and implementation of project-specific documentation, such as the Construction Environmental Management Plan, Operation Environmental Management Plan, Environmental Water Management Plan and Operating Plan, that will be implemented as part of the projects.

The Framework 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.

It also provides for the regular review and updating of environmental management plans, strategies and sub-plans, as well as requirements for independent compliance monitoring, auditing and reporting.

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 33, *Vinifera and Nyah Floodplain Restoration Projects, Ministers Assessment under Environment Effects Act 1978*, October 2023 (available online at www.planning.vic.gov.au)

² *Burra Creek Floodplain Restoration Project, Ministers Assessment under Environment Effects Act 1978*, January 2024 (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 Swan Hill Planning Scheme by Planning Scheme Amendment C78swan, gazetted on 9 January 2025. Condition 4.5 of the Incorporated Document requires the preparation of an EMF for the projects to the satisfaction of the Minister for Planning prior to the commencement of development (excluding preparatory buildings, as per 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	
The environmental management framework must ³ :	
c) Be prepared to the satisfaction of the Minister for Planning.	n/a
d) Be submitted in electronic form.	n/a
e) Be informed by the findings and conclusions of the environment report prepared for the projects under the <i>Environment Effects Act 1978</i> and by the Minister's Assessment.	Section 1
f) Be prepared in consultation with the Department of Energy, Environment and Climate Action.	Sections 1, 10.1 and 10.2
g) Include a statement of all environmental commitments for the projects, including details of the required content and review process for additional management and monitoring plans to be developed.	Sections 7, 8, 11 and 12
h) Contain the environmental delivery standards that are applicable to the design, construction and operation of the projects and address the following areas and any other relevant matters: <ul style="list-style-type: none"> i. Aboriginal cultural heritage. ii. Air quality. iii. Bushfire. iv. Contamination. v. Environmental management. vi. Geology and soils. vii. Groundwater. viii. Historical heritage. ix. Landscape and visual. x. Native vegetation. xi. Noise and vibration. xii. Overall biodiversity improvement. xiii. Social and business. xiv. Surface water. xv. Threatened species and communities and their habitat. 	Section 11

³ Note there is no Condition 4.5.2a of 4.5.2b due to a typographic / formatting error in the Incorporated Document.

xvi. Traffic and transport.	
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 4.5.5	
Any request to amend the environmental management framework must be accompanied by: <ul style="list-style-type: none"> a) A description of the form and extent of any consultation undertaken with relevant stakeholders concerning the proposed amendment. b) Any written comments received from relevant stakeholders. 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 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 Vinifera and Nyah 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 will 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 will operate in accordance with requirements for environmental watering under the *Water Act 2007* (Cth) and the *Water Act 1989* (Vic).

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 Peoples – State Relations continue to play a key role having issued the relevant approvals for the VMFRP and through ensuring ongoing compliance with relevant approvals.

3.2 The Vinifera and Nyah projects

The Vinifera and Nyah projects will 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 relevant private landowners, to ensure the successful delivery of the Vinifera and Nyah projects. In addition, the Mallee CMA will convene an Operations Group for the Vinifera and Nyah 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 Vinifera and Nyah projects will 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 will 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 the project specific plans outlined in this Framework and applicable statutory approval conditions.

Construction of the Vinifera and Nyah 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.

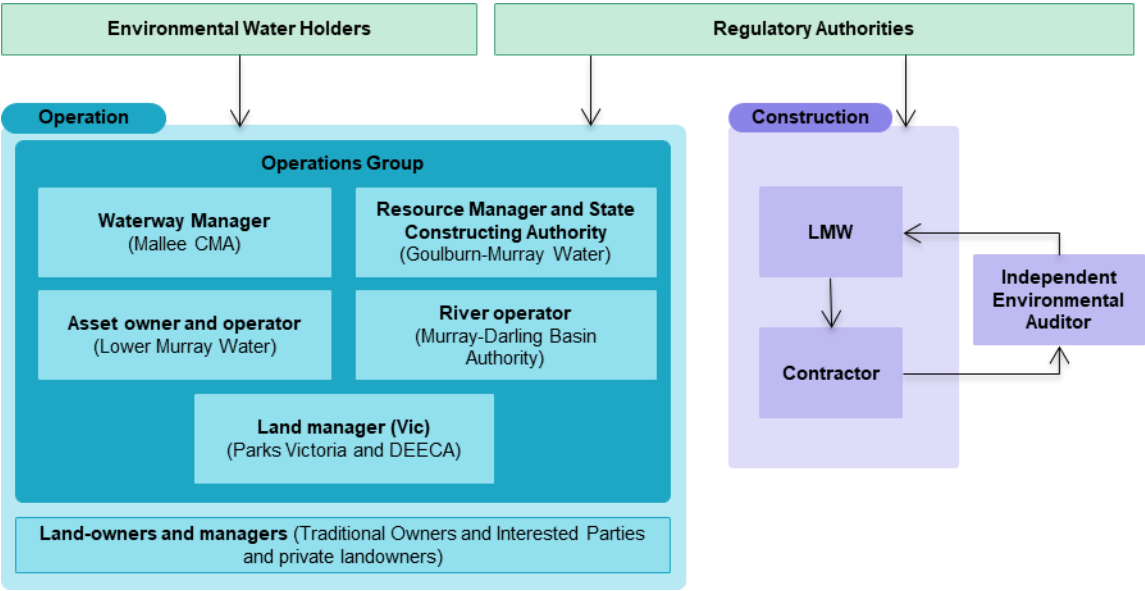
In addition to the legislative framework for managing the Murray-Darling Basin, the *Water Act 2007* (Cth) established:

- 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 will 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 (SCBEC). 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 and displayed in Figure 1 below are set out in the series of tables contained in Section 3.3.

Figure 1: Organisational chart for the Vinifera and Nyah projects



3.3 Roles and responsibilities

The key roles and responsibilities for the Vinifera and Nyah projects, as well as ensuring compliance with this Framework and the Environmental Delivery Standards are described in Table 2 (Regulatory authorities), Section 7.1 (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 Vinifera and Nyah projects.

Table 2: Roles and responsibilities of key regulatory authorities for the Vinifera and Nyah projects

Organisation	Responsibility
Commonwealth	
Commonwealth Minister for the Environment	Having granted approvals under the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth) (EPBC Act) for the projects as follows: <ul style="list-style-type: none">Vinifera project (Referral Number EPBC 2020/8647) on 28 March 2024

Organisation	Responsibility
	<ul style="list-style-type: none"> Nyah project (Referral Number EPBC 2020/8648) on 28 March 2024 <p>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.</p>
Murray-Darling Basin Authority	<p>Assess proposals 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 <i>Water Act 2007</i> (Cth) for the Vinifera and Nyah projects.</p> <p>Approve plans for proposed works submitted to the MDBA under clause 63 of Schedule 1 of the <i>Water Act 2007</i> (Cth).</p>
Victoria	
Minister for Planning (Vic)	<p>Review and approve this EMF for the Vinifera and Nyah projects against the requirements of Conditions 4.5.1 to 4.5.6 of the C78swan Incorporated Document</p> <p>Consider, approve and endorse a development plan in accordance with Clause 4.4.1 and 4.4.2 of the C78swan Incorporated Document.</p> <p>Consider, approve and endorse a bushfire emergency response plan in accordance with Clause 4.11.1 of the C78swan Incorporated Document.</p> <p>Receive three-monthly Construction Environmental Performance Reports as described in Section 8.3.3.</p> <p>Receive annual Operational 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.</p> <p>The Minister for Planning is the responsible authority for the projects on land subject to the SCO2 in the Swan Hill Planning Scheme, as such the Minister is responsible for administering and enforcing the controls introduced by planning scheme amendment C78swan through both the construction and operation phases.</p>
Minister for Water (Vic)	<p>Issue a licence to construct, alter, operate, remove or decommission any works on a waterway under Section 67 of the <i>Water Act 1989</i> (Vic) for the Vinifera and Nyah projects.</p> <p>During a watering event, if LMW cannot activate a piece of infrastructure and divert water by means of the VEWB's environmental entitlement, a Water-Use Registration issued by the Minister for Water (under Section 64AR of the <i>Water Act 1989</i> (Vic)) may be required to authorise the use of water for purposes other than irrigation.</p>

Organisation	Responsibility
<p>Secretary to DEECA (as constituted under Part 2 of the <i>Conservation, Forests and Lands Act 1987</i>)</p> <p>Note: applies to all references to Secretary to DEECA</p>	<p>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 C78swan Incorporated Document, respectively.</p> <p>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 C78swan Incorporated Document.</p> <p>Receive information regarding monitoring in accordance with Clause 4.7 of the C78swan Incorporated Document within the Swan Hill planning scheme.</p> <p>Consider, approve and endorse a fire access road plan in accordance with Clause 4.11.3 and 4.11.4 of the C78swan Incorporated Document.</p> <p>Issue a licence or permit to take protected flora under Section 48 of the <i>Flora and Fauna Guarantee Act 1988</i> (Vic).</p> <p>Issue a licence or permit to handle fish under Section 53 of the <i>Flora and Fauna Guarantee Act 1988</i> (Vic).</p> <p>Give written authorisation to take, handle and disturb wildlife that may be at risk of harm during construction works under Section 28A of the <i>Wildlife Act 1975</i> (Vic).</p>
Secretary to the Department of Premier and Cabinet	<p>Approve and ensure compliance with the Cultural Heritage Management Plan (CHMP) for Vinifera (CHMP No. 16901) and Nyah (CHMP No. 16900) under the <i>Aboriginal Heritage Act 2006</i> (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.</p>
Minister for Resources	<p>Issue exemption from licence for borrow sites if required under the <i>Mineral Resources (Sustainable Development) Act 1990</i>. 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.</p>
Parks Victoria	<p>Parks Victoria is the land manager for the Crown land under the <i>National Parks Act 1975</i> (Vic) and <i>Crown Land (Reserves) Act 1978</i> (Vic), in this case, the Nyah-Vinifera Park, where infrastructure will be constructed and operated and the wetlands, waterways and floodplain where the environmental water will be delivered.</p> <p>For infrastructure to be constructed, maintained and operated in a National Park, issue consent for such works under Section 27 of the <i>National Parks Act 1975</i> (Vic). Consent and licence the occupation of public land relating to the construction, operation and maintenance of infrastructure at the Vinifera and Nyah projects, under the</p>

Organisation	Responsibility
	<p>provisions of the <i>Crown Land (Reserves) Act 1978</i> (Vic) (Section 17).</p> <p>Issue Access Agreements and Permits for on-park activities such as ecological monitoring, pest plant and animal control or (unlicensed) works conducted by other parties on the Parks Victoria estate.</p> <p>Prepare and submit Native Title Future Act notification/s under the <i>Native Title Act 1993</i> (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.</p>
Victorian Fisheries Authority	Provide authorisation to create obstructions to fish passage (Section 119) and/or a permit to take fish (Section 49) under the <i>Fisheries Act 1995</i> (Vic) for the Vinifera and Nyah projects.
Heritage Victoria	Provide consent under Sections 123 and 124 of the <i>Heritage Act 2017</i> (Vic) to deface, damage or otherwise interfere with an archaeological site for the Vinifera and Nyah projects, if required.
Swan Hill Rural City Council	As coordinating road authority for municipal roads, provide consent to construct works on a road under the <i>Road Management Act 2004</i> (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 4.10 of the C78swan Incorporated Document.
Head, Transport for Victoria	Consider, approve and endorse a road access plan, if required, in accordance with Clause 4.9.1 of the C78swan Incorporated Document.
New South Wales	
Minister for Planning and Public Spaces (NSW)	Undertake an assessment and provide consent for the Vinifera and Nyah projects under the Murray River environmental planning instruments, pursuant to Part 4 of the <i>Environmental Planning and Assessment Act 1979</i> (NSW). Approval of a development consent under the Murray Local Environmental Plan (LEP) 2011 and/or Wakool LEP 2013 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 <i>Fisheries Management Act 1994</i> (NSW) for the Vinifera and Nyah 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 <i>National Parks and Wildlife Act 1974</i> (NSW), if required, for the Vinifera and Nyah projects.

4 Statutory approvals and consents

LMW was responsible for preparing the Environmental Report required for the Vinifera and Nyah projects in accordance with the conditions of the Minister for Planning's no-EES decisions under the *Environment Effects Act 1978* (Vic). Table 3 provides an overview of the key statutory approvals and consents required for the Vinifera and Nyah projects. Further information on all approvals and consents required for the Vinifera and Nyah projects can be found in Environment Report Attachment III Legislation and policy.

Table 3: Statutory approvals and consents required for the Vinifera and Nyah projects

Legislation	Approval authority	Statutory approval/consent	Phase
Commonwealth			
<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth) (EPBC Act)	Commonwealth Minister for the Environment	Approval for the Vinifera (Referral Number EPBC 2020/8647) and Nyah (Referral Number EPBC 2020/8648) projects for potential impacts on Matters of National Environmental Significance.	Construction and Operation
<i>Water Act 2007</i> (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			
<i>Planning and Environment Act 1987</i> (Vic)	Minister for Planning	Approval of a Planning Scheme Amendment to the Swan Hill Planning Scheme for the Vinifera and Nyah projects. Approval of EMF and EDSs under the Incorporated Document.	Construction and Operation
<i>Aboriginal Heritage Act 2006</i> (Vic)	Secretary to Department of Premier and Cabinet	Evaluation and approval of two CHMPs: <ul style="list-style-type: none"> Vinifera CHMP No. 16901 Nyah CHMP No. 16900. 	Construction
<i>Flora and Fauna Guarantee Act 1988</i> (Vic) (FFG Act)	Secretary to DEECA	Approve a permit to take protected flora on Crown land under Section 48.	Construction

Legislation	Approval authority	Statutory approval/consent	Phase
		Approve a permit to handle fish under Section 53.	
<i>National Parks Act 1975</i> (Vic)	Parks Victoria	Consent to perform and exercise functions in Nyah-Vinifera Park, a designated Schedule 3 – Other Park, under Section 27.	Construction and Operation
<i>Crown Land (Reserves) Act 1978</i> (Vic)	Parks Victoria	Approval of a licence or lease to occupy land within natural feature reserves, including the River Murray Reserve, under Section 17.	Construction and Operation
<i>Water Act 1989</i> (Vic)	Minister for Water (Vic)	Approval of a licence: To construct, alter, operate, remove or decommission any works on a waterway under Section 67.	Construction and Operation
<i>Wildlife Act 1975</i> (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
<i>Heritage Act 2017</i> (Vic)	Executive Director, Heritage Victoria	Consent to excavate, uncover, disturb, damage or otherwise interfere with an archaeological site whether or not it is included on the Victorian Heritage Inventory under Section 124, if required.	Construction
<i>Road Management Act 2004</i> (Vic)	Swan Hill Rural City Council	Provide consent for use or development of land within a declared road.	Construction
New South Wales			
<i>Environmental Planning and Assessment Act 1979</i> (NSW)	Minister for Planning and Public Spaces	Approval under the Murray River environmental planning instruments, pursuant to Part 4. Approval of development consent under the Murray LEP 2011 and/or Wakool LEP 2013.	Construction

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

The Contractor(s) engaged by LMW to construct the Vinifera and Nyah 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), applies 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 has been central to the development of the Vinifera and Nyah 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 Environment Report) and the environmental risk assessment undertaken for the Vinifera and Nyah projects (refer Attachment II of the Environment Report).

The development of the EDSs has been an iterative process with input from the specialist assessments undertaken as part of this Environment Report, 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 Environment Report. The EDSs cover the design, 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 Environment Report. This assessment will need to ensure compliance with the EDSs, and approval conditions.

The project risk register, developed from the environmental risk assessment completed for this Environment Report, will be required to 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 delivery 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 Vinifera and Nyah projects to be implemented by this Framework, is set out in Table 4.

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

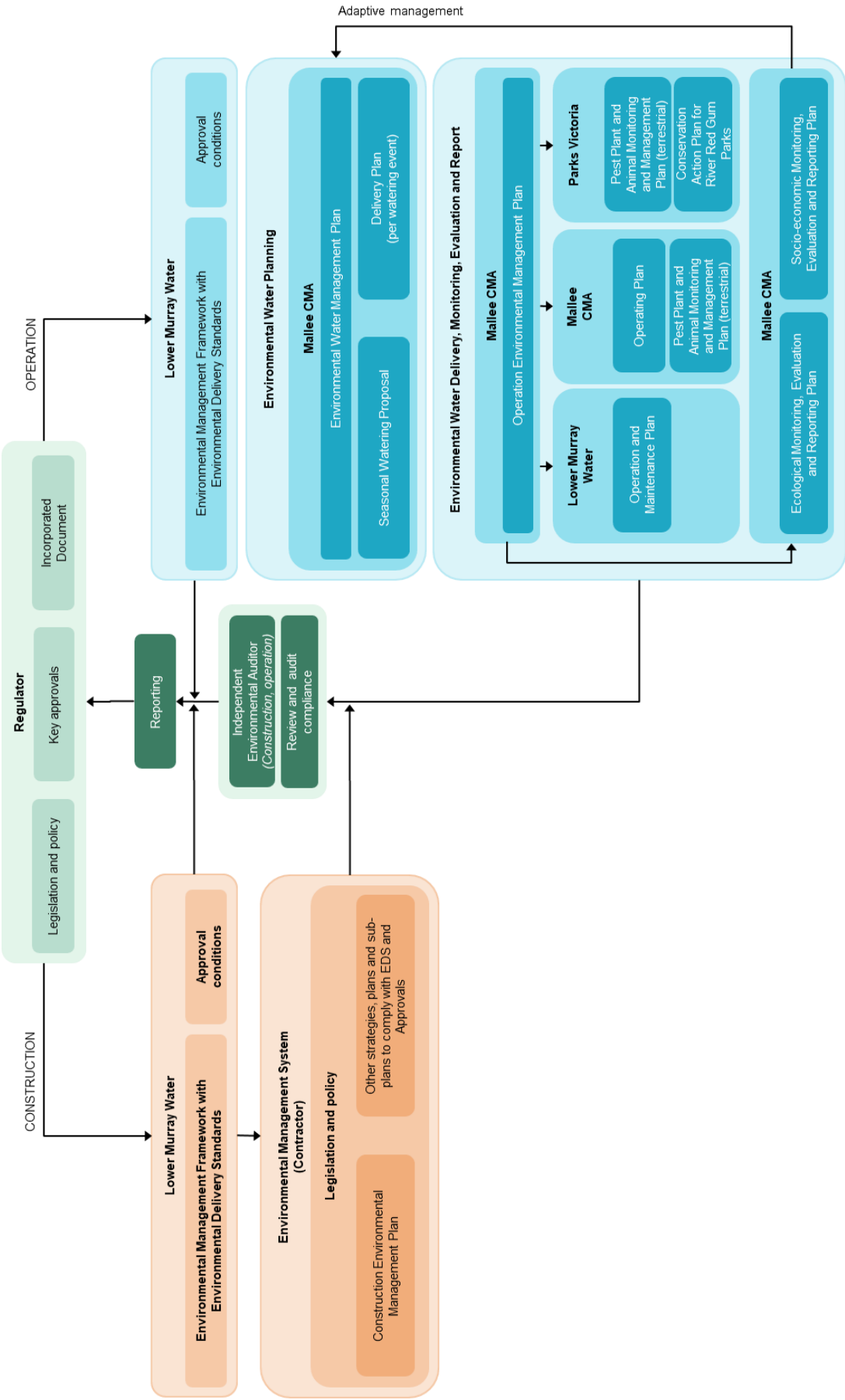
Table 4: Vinifera and Nyah projects environmental management documentation

Level	Owner	Purpose	Document
1- Strategic Framework	LMW	Sets the overarching requirements, standards and measures to be implemented for the development and operation of the Vinifera and Nyah projects.	Environmental Management Framework EDSs
2- Management of operational impacts	Mallee CMA	Plans for the delivery of environmental water, the operation of the Vinifera and Nyah projects and the monitoring and reporting of the outcomes, in accordance with ecological objectives.	Operation Environmental Management Plan ¹ Environmental Water Management Plans Seasonal Watering Proposal Delivery Plan Operating Plan Ecological Monitoring, Evaluation and Reporting Plan Socio-economic Monitoring, Evaluation and Reporting Plan
	LMW	Plans to manage the operation of the Vinifera and Nyah projects infrastructure.	Operations and Maintenance Plan
	VEWH	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

Level	Owner	Purpose	Document
3- Detailed plans for construction impacts	Construction Contractor	Plans to manage the Vinifera and Nyah projects' construction impacts to manage localised and specific issues. Independent Environmental Auditor will review and audit compliance.	Construction Environmental Management Plan Sub-plans, including those required by the EDSs.

Notes: ¹ – equivalent to Operating Plan as per the Environment Report Scoping Requirements

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 Vinifera and Nyah projects.

At the completion of the construction of the Vinifera and Nyah 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 Vinifera and Nyah 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, VI and VII of the Environment Report.

Table 5: Roles and responsibilities during Operation for the Vinifera and Nyah projects

Organisation	Role	Responsibility
Minister for Water (Vic)	Water regulation	<p>Oversee Victoria's environmental water management policy framework, and its implementation.</p> <p>Oversee the VEWH, including appointment and removal of commissioners and creation of rules ensuring VEWH managers the water holdings in line with environmental water management policy.</p> <p>Administer the broader water allocation and entitlements framework, as well as the <i>Water Act 1989</i> (Vic).</p>
MDBA (River Murray Operations department only)	River operator	<p>Management and operation of the Murray River on behalf of the Basin States in accordance with the <i>Water Act 2007</i> (Cth).</p> <p>Member of the Operations Group for the Vinifera and Nyah projects.</p> <p>Assist the waterway manager and asset owner by providing advice on Basin-wide operations and any implications for the Vinifera and Nyah projects. Provide advice in environmental water planning and any future water delivery considerations.</p> <p>Storage of data obtained at the structures throughout environmental watering events on the MDBA system.</p> <p>Update and re-calibrate the water use model during and after environmental watering events.</p>
DEECA – Water and Catchments Group (WCG)	Project sponsor	<p>Develop and implement state policy on water resource management and waterway management for the Minister for Water.</p>

Organisation	Role	Responsibility
		<p>Develop and implement state policy for the management of environmental water in regulated and unregulated systems for the Minister for Water.</p> <p>Manage the water allocation and entitlements framework for the Minister for Water.</p> <p>Act on behalf of the Minister for Water to maintain oversight of the VEW and waterway managers (in their role as environmental water managers).</p> <p>Responsible for overseeing environmental water programs in Victoria, including legislation, policy, and investment programs.</p> <p>Ensure integration of activities with the Basin Plan and related State initiatives.</p> <p>Oversee the implementation of the VMFRP operation, monitoring, maintenance and adaptive management requirements to facilitate funding arrangements during the construction and operation.</p>
Mallee CMA	Waterway manager	<p>Established under the <i>Catchment and Land Protection Act 1994</i> (Vic) and holds a statutory function of managing waterways, drainage and floodplains under Part 10 of the <i>Water Act 1989</i> (Vic).</p> <p>Responsible for the operational implementation of environmental watering activities as outlined in the <i>Water Act 1989</i> Statement of Obligations Catchment Management Authority (2006).</p> <p>Prepare and undertake continuous review of the Operating Plans for the infrastructure to be built as part of the Vinifera and Nyah projects.</p> <p>Prepare and undertake continuous review of the Environmental Water Management Plans for the infrastructure to be built as part of the Vinifera and Nyah projects.</p> <p>Lead the planning for and coordination of environmental watering events for the Vinifera and Nyah projects in accordance with the Environmental Water Management Plan and Operating Plans.</p> <p>Convene the Operations Group for the Vinifera and Nyah projects.</p> <p>Develop proposals for watering actions within the systems they manage (refer to section 192A of the <i>Water Act 1989</i> (Vic)) including Seasonal Watering Proposal and Delivery Plan in collaboration with the Operations Group.</p> <p>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.</p> <p>Order environmental water and coordinate relevant activities, including undertaking relevant communications and monitoring of process and extent of inundation, and post-event reporting.</p> <p>Coordinate monitoring and collate monitoring results in relation to watering events in line with the Monitoring, Evaluation and Reporting Plans.</p>

Organisation	Role	Responsibility
		<p>Implement adaptive management processes as part of planning and delivering environmental water for the Vinifera and Nyah projects, including consideration of monitoring results and observations.</p> <p>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.</p> <p>Ensure compliance with key statutory approvals and approval conditions.</p>
LMW (as appropriate) GMW (as appropriate) Parks Victoria SA Water (as appropriate) MDBA River Management CEWO VEWH	Operations Group	<p>Mallee CMA will convene an Operations Group, including agency representatives from Parks Victoria, LMW, GMW and MDBA River Management, and water holders.</p> <p>Assist and advise on the commissioning and operation of the Vinifera and Nyah projects.</p> <p>Provide a forum to involve project partners in the decision-making process, to consider broader system operations during planning and operation.</p> <p>Ensure the necessary planning, monitoring, communication, and reporting arrangements are established prior to and during events and to identify and monitor any event risks or issues..</p>
LMW	Asset owner and operator	<p>Manage and operate water delivery infrastructure that connects water extracted from waterways to the locations nominated by the Mallee CMA under the <i>Water Act 1989</i> (Vic).</p> <p>Own, operate and maintain VMFRP assets in accordance with the Operations and Maintenance Plan and to manage the environmental water for the Vinifera and Nyah projects in line with the Operation Environmental Management Plan.</p> <p>Lead the coordination of and responsible for environmental management during the wet commissioning phase for the Vinifera and Nyah projects.</p> <p>Member of the Operations Group for Vinifera and Nyah projects, contributing to the annual cycle of seasonal environmental water planning, including the review and endorsement of Seasonal Water Proposals.</p> <p>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.</p> <p>Responsible for ownership, operations and maintenance of infrastructure in accordance with the Section 27 licence conditions in respect of licences issued by Parks Victoria under Section 27 of the <i>National Parks Act 1975</i> (Vic).</p>
GMW	Northern Victoria Resource Manager	<p>Resource manager for the Victorian Murray River system with statutory responsibilities under the <i>Water Act 1989</i> (Vic).</p> <p>Undertake river operational planning and operate and manage the water storages and associated lands to meet the requirements established under</p>

Organisation	Role	Responsibility
		<p>the <i>Water Act 1989</i> (Vic). This includes the storage and release of water in accordance with the provisions of bulk and environmental entitlements.</p> <p>Responsible for the liaison and joint planning with the MDBA to ensure that the shared resources of the Murray River system are effectively managed.</p> <p>Member of the Operations Group for Vinifera and Nyah projects, contributing to the annual cycle of seasonal environmental water planning, including the review and endorsement of Seasonal Water Proposals.</p> <p>Work with the VEWB and waterway managers in planning the delivery of environmental water.</p> <p>Undertake seasonal determinations of water available to entitlement holders and monitor compliance with entitlements, including environmental entitlements</p>
	State Constructing Authority	Manage prescribed water supply infrastructure such as dams and regulators to deliver environmental water in accordance with the Murray Darling Basin Agreement.
Parks Victoria	Land manager	<p>Established under the <i>Parks Victoria Act 2018</i> (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.</p> <p>Parks Victoria is the Land Manager of the Nyah-Vinifera Park, reserved under the <i>National Parks Act 1975</i> (Vic), and natural features reserves including the River Murray Reserve, reserved under the <i>Crown Land (Reserves) Act 1978</i> (Vic), where the Vinifera and Nyah projects are proposed.</p> <p>As Land Manager where environmental water delivery infrastructure is proposed to be constructed and operated, Parks Victoria is a VMFRP partner through the entirety of the project life. Parks Victoria is working collaboratively with project partners to ensure the objectives of the <i>Parks Victoria Act 2018</i> (Vic) are fully considered throughout the planning and design phase.</p> <p>Operation and maintenance of the environmental water delivery asset infrastructure 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.</p> <p>Member of the Operations Group for Vinifera and Nyah projects, contributing to the annual cycle of seasonal environmental water planning, including the review and endorsement of Seasonal Water Proposals.</p> <p>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 other site-based ecological objectives, and ensure the protection of cultural heritage within the entire project footprint; and encourage and enable visitor appreciation.</p> <p>As the land manager, Parks Victoria will implement operational plans developed via the VMFRP approvals process, including the Pest Plants and</p>

Organisation	Role	Responsibility
		<p>Animals Monitoring and Management Plan (terrestrial) and the Conservation Action Plan for River Red-Gum Parks.</p> <p>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, will be implemented by Parks Victoria as the land manager.</p> <p>Deliver actions which protect, conserve and enhance the cultural and natural values of the Nyah-Vinifera Park and River Murray Reserve in accordance with the requirements of the <i>Parks Victoria Act 2018</i> (Vic), whilst providing for the land to be appropriately used, enjoyed and appreciated.</p> <p>Engage with site visitors about environmental water-related matters.</p> <p>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.</p> <p>Approve watering on public land, as well as managing public access during and after event.</p> <p>Provide details of site ecological responses and any future implications.</p>
DEECA Regions, Environment, Climate Action and First Peoples (RECAFP) and 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.
Swan Hill Rural City Council Department of Transport Heritage Victoria Roads Corporation Country Fire Authority Environment Protection Authority.	Regulator	Review and provide input to the Operation Environmental Management plan

Organisation	Role	Responsibility
CEWH	Environmental water holder	<p>Established under the <i>Water Act 2007</i> (Cth) to hold and manage Commonwealth environmental water holdings in line with the Basin Plan.</p> <p>Supported by CEWO to make decisions on the use of environmental water.</p> <p>Provides water across the Murray-Darling Basin to meet environmental priorities and targets in accordance with the requirements of the Basin Plan.</p> <p>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.</p>
VEWH	Environmental water holder	<p>Established under the <i>Water Act 1989</i> (Vic) to hold and manage Victoria's Environmental Water Holdings.</p> <p>Coordinates with CEWO, DEECA, partners in TLM program and other States to ensure effective implementation of environmental water policy and management.</p> <p>Responsible for state-wide planning for the use of Victoria's environmental water and allocating its water to seasonal environmental watering actions.</p> <p>Assist with compilation and review of reports issued to MBDA, as well as reviewing volumes of environmental water used.</p>
SCBEWC	Environmental water coordinator	<p>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.</p> <p>Supports the coordination of delivery of all environmental water in the Southern Connected Murray-Darling Basin, consistent with the Basin Plan.</p> <p>Responsible for decisions on the use of jointly held water available under the TLM portfolio and the governance of TLM programs.</p>
Traditional Owners and Interested Parties	Landowners and managers	<p>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.</p> <p>Invited to raise and identify any cultural or spiritual links to the Vinifera and Nyah areas for inclusion in water management processes.</p>

7.2 Environmental watering process

The environmental water management cycle comprises four key stages, which are presented in Figure 3 and outlined in 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 The Living Murray 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 Environment Report.

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	Prepare Seasonal watering proposal – Mallee CMA
		Prepare Seasonal Watering Plan – VEWH

Stage	Process	Responsibility
	<p>the site objectives and the findings and observations from monitoring programs in preparation of the seasonal watering proposals.</p> <p>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.</p> <p>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.</p>	
Prioritise	<p>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.</p> <p>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 Environment Report for further information on the prioritisation process.</p>	VEWH
Deliver	<p>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.</p> <p>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.</p> <p>Potential risks, such as the flooding of private property, are considered before any environmental water is delivered.</p> <p>Other types of water, such as unregulated flows following heavy rainfall, can naturally meet environmental objectives and result in environmental water not being required.</p> <p>The asset owner and operator deliver environmental water in accordance with the instruction issued by the waterway manager.</p>	<p>Storage manager – GMW</p> <p>Waterway manager – Mallee CMA</p> <p>Asset owner and operator – LMW</p>
Report	<p>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.</p> <p>Informed by monitoring, waterway managers and environmental water holders report on benefits realised from environmental watering and lessons learned via their websites.</p> <p>Environmental monitoring, evaluation and reporting are considered in adaptive management measures and subsequent Seasonal watering proposals and Plans.</p>	<p>Storage manager – GMW</p> <p>Waterway manager – Mallee CMA</p>

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 Vinifera and Nyah projects will 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 project 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 Vinifera and Nyah projects are outlined in Table 4. Where indicated in Table 4, outcomes of the Environment Report have been incorporated into document updates.

Table 7: Adaptive management documents and responsibilities

Adaptive management phase	Relevant plans and documents	Update following Environment Report outcomes	Responsibility	Refer to
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Planning	Long term planning: Environmental Water Management Plan	Yes	Mallee CMA	7.3.2
	Annual planning: Seasonal Watering Proposal Seasonal Watering Plan	Not required as updated annually	Mallee CMA VEWH	7.3.3
Water delivery and management	Delivery Plan Operating Plan	Not required for Delivery Plan as updated for each environmental watering event. Operating Plan will be updated as required.	Mallee CMA	7.3.4 7.3.5
Monitoring and reporting	Ecological Monitoring, Evaluation and Reporting Plans Socio-economic Monitoring, Evaluation and Reporting Plans Ecological monitoring reports Environmental watering database	Yes	Mallee CMA	7.4.1
Evaluation	Adaptive Management Checkpoint Watering Event Lessons Record Development of Seasonal Watering Proposal Review and update of Environmental Water Management Plan	Not required as updated following environmental watering event	Mallee CMA	7.4.2 7.3.3 7.3.4

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 7.3 and 7.3.1.

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 Vinifera and Nyah 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 Vinifera and Nyah 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 Vinifera and Nyah 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: Minister for Planning (or delegate)	Initial Issue Prior to commencement of construction, excluding preparatory buildings and works Reviewed 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 Prior to commencement of environmental watering Reviewed 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 DEECA WCG and VEWB	Initial Issue Prior to commencement of environmental watering Reviewed 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).	VEWB (as decision maker for which proposals are carried forward into the Seasonal Watering Plan)	Issue Prior to an environmental watering event
The Delivery Plan describes the objectives of the environmental watering event and details of a specific	VEWB	Issue Prior to an environmental watering event

Operational document overview	Approve and/or accept	Issue and review timing
environmental water delivery process. It will be prepared by Mallee CMA.		
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: DEECA WCG	Initial Issue Prior to commencement of environmental watering Reviewed 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 Prior to commencement of environmental watering Reviewed 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 by Parks Victoria and Mallee CMA.	Parks Victoria (Terrestrial) Mallee CMA (aquatic)	Issue 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 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: Ecological Monitoring, Evaluation and Reporting Plan Socio-economic Monitoring, Evaluation and Reporting Plan. The Plans will be prepared by Mallee CMA.	DEECA WCG	Initial Issue Prior to commencement of environmental watering Reviewed Five years or as needed
The Communications and Stakeholder Engagement Plan – Operations sets out the ongoing commitments for	Mallee CMA	Initial Issue Prior to commencement of environmental watering

Operational document overview	Approve and/or accept	Issue and review timing
consultation prior to, during and after managed inundation events		Reviewed <u>Five years or as needed.</u>

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 Environment Report 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 Vinifera and Nyah 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 Vinifera and Nyah 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 9 for definitions of major and minor). All amendments requiring a change to the Special Controls Overlay, EMF or EDSs will require 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:

- DTP
- Heritage Victoria
- First Peoples – State Relations
- EPA
- Mallee CMA
- Parks Victoria
- DEECA RECAFP

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 Vinifera and Nyah 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 Environmental Watering Plan prepared by the MDBA in accordance with Chapter 8 of the Basin Plan, and 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 for rivers or wetlands identified by Mallee CMA in their regional Waterway Strategy as priorities for environmental watering.

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

Environmental Water Management Plans are prepared for all environmental watering projects, including the Vinifera and Nyah projects, and include:

- Description 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 identifying 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 will 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 Vinifera and Nyah 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 will include the operation of the Murray River and irrigation system to deliver water to the Vinifera and Nyah 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 Vinifera and Nyah projects.

The draft Environmental Water Management Plans for the Vinifera and Nyah projects will be reviewed and accepted by DEECA WCG and VEWB prior to finalisation and before any environmental watering being undertaken.

Review and updates of the Environmental Water Management Plan are 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 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 known as a Watering Event Lessons Record (refer to Section 7.4.2 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 RECAFP
- MDBA
- VEW
- 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 Vinifera and Nyah 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.

Seasonal Watering Proposals 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 VEW's Seasonal Watering Plan.

Prior to submission to the VEW, the Seasonal Watering Proposals for each of the Vinifera and Nyah 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 VEW, 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 are reviewed and considered by the VEW, who consider the proposals against the annual environmental watering requirements for Victoria.

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

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 Vinifera and Nyah. 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 VEW and MDBA
- Includes a communications and engagement plan for the watering event.

The Delivery Plans for each watering event required as part of the Vinifera and Nyah projects will be reviewed and approved by the VEW. 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 Vinifera and Nyah 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 Vinifera and Nyah 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 Vinifera and Nyah 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 Vinifera and Nyah projects, including design and control principles and fundamentals and naming conventions to be used
- Outline of the environmental watering scenarios designed for the Vinifera and Nyah 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 Vinifera and Nyah 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 RECAFP (for the preparation to ensure compliance with Environment Report outcomes and not for ongoing reviews and updates)
- Lower Murray Water
- Parks Victoria
- Goulburn-Murray Water
- 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

An Operations and Maintenance Plan will be developed for both of the Vinifera and Nyah projects. The Operations and Maintenance Plan provides the framework for operating and maintaining the water management and associated assets built for the Vinifera and Nyah projects, and outlines:

- Roles and responsibilities for the operation of the Vinifera and Nyah projects' structures
- Operating activities
- A description of the procedures and limits (operator controls) of plant and equipment used in 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 Environment Report 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 Vinifera and Nyah projects in order 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 and Park Management Plans.

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 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 terrestrial and aquatic 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 reviewed and updated if necessary to incorporate the relevant requirements of this EMF, including the Pest Plant and Animal Monitoring and Management Plan prior to the commencement of environmental watering.

7.3.8 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 that 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 Vinifera and Nyah 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 Act 1989* (Vic).

7.3.9 Communications and Stakeholder Engagement Plan – Operation

The requirements for this plan are set out in EDS SB3 (refer Table 1 in Section 11).

7.4 Operational performance management

Performance management and compliance will be monitored, evaluated, audited and reported on during the operation of both the Vinifera and Nyah 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 directly address 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 Vinifera and Nyah projects and to monitor compliance with the relevant EDSs and statutory approval 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 of the objectives and targets, the range of potential methods available for the monitoring, and the observed responses from previous environmental watering actions.

Monitoring will be undertaken for duration of the operation of the Vinifera and Nyah projects.

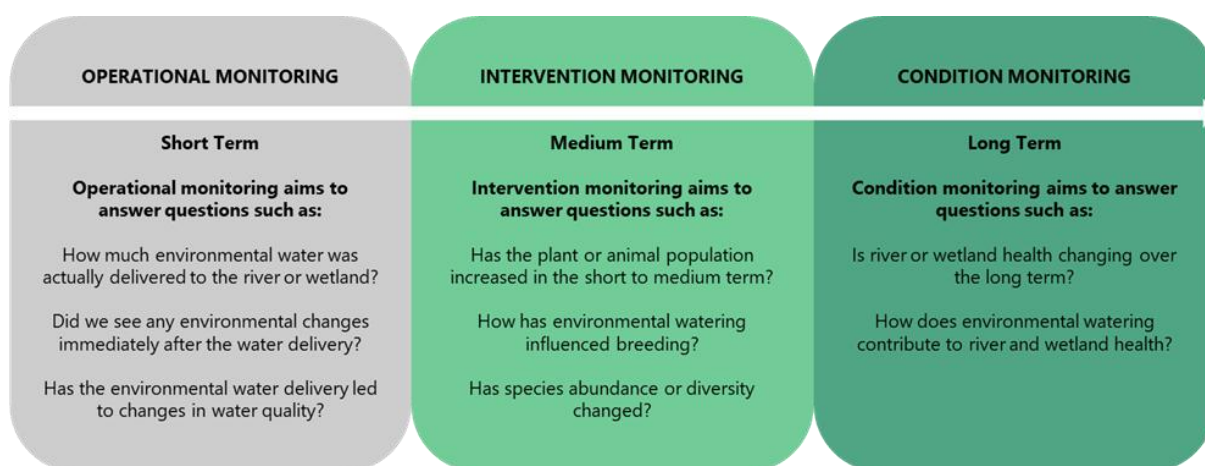
Monitoring, evaluation, and reporting on the use of environmental water helps to build knowledge around the best way to improve the health of the rivers and wetlands and to ensure risks are appropriately managed. Ecological communities are complex and there are several other variables in addition to 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 Vinifera and Nyah 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 – monitoring commenced for the Vinifera and Nyah projects in 2020. 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 Vinifera and Nyah 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 which 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 both 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 more comprehensive evaluation at regional and Basin-wide scales
- Aims to capture both terrestrial and aquatic ecological outcomes of the Vinifera and Nyah 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, targets and Key Evaluation Questions
- 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 Vinifera and Nyah 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 Environment Report assessment process. This update will ensure that:

- The monitoring and evaluation requirements identified as part of this Environment Report, 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 Environment Report 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 will 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: which articulates the need, activities and desired short-term, mid-term and long-term cultural and 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: to 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 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 Vinifera and Nyah 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
- VEW
- DEECA WCG
- DEECA RECARFP
- 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 VEWB 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 Vinifera and Nyah 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 Vinifera and Nyah projects can be found in Section 12.

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 adaptive 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 the agreed 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 Vinifera and Nyah projects.

Table 9: Roles and responsibilities during Construction for the Vinifera and Nyah projects

Organisation	Role	Responsibility
Minister for Planning	Regulator	<p>Approve the EMF and EDSs.</p> <p>Receive from LMW every three months the Construction Environmental Performance Report for the relevant reporting period.</p> <p>As the responsible authority, the Minister is responsible for administering and enforcing the controls introduced by planning scheme amendment C78swan.</p>
Secretary to DEECA (or delegate)	Regulator	<p>Approve the Construction Environmental Management Plan, and all major revisions to the approved Construction Environmental Management Plan.</p>
LMW	Project proponent	<p>Obtain key statutory approvals for the Vinifera and Nyah projects.</p> <p>Review, evaluate and approve construction drawings for the Vinifera and Nyah projects.</p> <p>Finalise the EMF and EDSs for approval by the Secretary to DEECA under the Incorporated Document.</p> <p>Mandate Contractor compliance with this Framework including the EDSs.</p> <p>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).</p> <p>Review and evaluate the Construction Environmental Management Plan(s) and all other plans required by the EDSs, and all revisions to these documents.</p> <p>Monitor compliance with the Construction Environmental Management Plan and all plans required by the EDSs and require corrective action to be taken as necessary.</p> <p>Appoint an Independent Environmental Auditor.</p> <p>Liaise with regulators and other agencies as required.</p>

Organisation	Role	Responsibility
		<p>Conduct stakeholder engagement and community consultation activities. Address the concerns of stakeholders and community as required.</p> <p>Receive environmental audit reports prepared by the Independent Environmental Auditor.</p> <p>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.</p> <p>Prepare and provide to the Minister for Planning every three months the Construction Environmental Performance Report for the relevant reporting period.</p>
<p>LMW</p> <p>GMW</p> <p>Mallee CMA</p> <p>North Central CMA</p> <p>Parks Victoria</p>	Project Control Group	<p>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. The Project Control Group consists of the following members and representatives:</p> <ul style="list-style-type: none"> • Independent Project Control Group Chair • LMW – Managing Director • GMW – General Manager, Infrastructure Delivery Services • Mallee CMA – Chief Executive Officer (CEO) • North Central CMA – CEO • Parks Victoria – Regional Director, Northern Victoria • Independent Advisor – Traditional Owner engagement and project management.
Contractor(s)	Design and delivery	<p>Comply with all statutory approvals and approval conditions regarding approvals obtained by LMW and obtain all other necessary approvals and consents for the Vinifera and Nyah projects.</p> <p>Comply with this Framework, contract specification and all legislative requirements, approvals, approval conditions and EDSs.</p> <p>Ensure that all sub-contractors similarly comply with such requirements and take corrective action as necessary.</p> <p>Responsible for the dry commissioning phase for the Vinifera and Nyah projects.</p> <p>Prepare and implement the Construction Environmental Management Plan as required by this Framework.</p> <p>Attend to reviews of the Construction Environmental Management Plan and submit revised Construction Environment Management Plan to LMW for review and endorsement for</p>

Organisation	Role	Responsibility
		<p>minor changes and review and comment on all other changes.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>Conduct stakeholder engagement and community consultation activities in consultation with LMW.</p> <p>Engage an Environmental Manager with authority and responsibility for environmental management, as endorsed by LMW, who will:</p> <p>Be responsible for compliance and environmental management issues during the design and construction phases of the Vinifera and Nyah projects on behalf of the Contractor(s)</p> <p>Review environmental audit reports and ensure issues identified are addressed.</p>
Independent Environmental Auditor	Audit compliance	<p>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.</p> <p>Prepare the audit schedule for review by LMW prior to commencing audits.</p> <p>Conduct regular audits (every six months) of Contractor works to assess compliance with this Framework, relevant EDSs, Construction Environment Management Plan, and any other plans required by the EDSs, statutory approvals and approval conditions.</p> <p>Prepare -audit reports (every six months) summarising the Contractor's compliance and</p>

Organisation	Role	Responsibility
		<p>results of audits and provide them to LMW and the Contractor(s).</p> <p>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.</p> <p>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.</p>
EPA Swan Hill Rural City Council Roads Corporation Country Fire Authority (CFA) Department of Transport.	Regulator	Review and provide input to the Construction Environmental Management Plan

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 Vinifera and Nyah 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 11. These are listed in the following table.

Table 10: Plans required for construction of the Vinifera and Nyah projects as specified in the Environmental Delivery Standards

Plan	Prepare	Consult	Approve and/or Accept	Relevant EDS
Environmental Management Framework	LMW	<ul style="list-style-type: none"> GMW MDBA Parks Victoria DEECA RECAFP. 	Minister for Planning (or delegate)	N/A
Vinifera Cultural Heritage Management Plan (No. 16901)	LMW (prepared by R8)	<ul style="list-style-type: none"> Traditional Owners and Interested Parties Mallee CMA Parks Victoria. 	Secretary to DPC	ACH1

Plan	Prepare	Consult	Approve and/or Accept	Relevant EDS
Nyah Cultural Heritage Management Plan (No. 16900)	LMW (prepared by R8)	<ul style="list-style-type: none"> Traditional Owners and Interested Parties Mallee CMA Parks Victoria. 	Secretary to DPC	ACH1
Development Plan	LMW	<ul style="list-style-type: none"> Parks Victoria 	Minister for Planning (or delegate)	N/A
Construction Environmental Management Plan	Contractor	<ul style="list-style-type: none"> Parks Victoria DEECA RECAFP EPA Swan Hill Rural City Council LMW GMW CFA DTP. 	Secretary of DEECA (or delegate)	EMF2
Other plans and sub-plans as required by the EDSs	Contractor	<ul style="list-style-type: none"> 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)	<ul style="list-style-type: none"> Swan Hill Rural City Council Parks Victoria. 	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 Vinifera and Nyah projects and ensure comprehensive and integrated identification and management of environmental risks and issues throughout the construction of the Vinifera and Nyah projects.

8.2.1 Development Plan

A development plan will be prepared for the Vinifera and Nyah projects prior to the commencement of development (excluding preparatory buildings and works) 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.
- Detail any staging of the development
- Be fully dimensioned and drawn to scale.

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

The development plans 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 plans with:

- Parks Victoria.

The development plans will require a change management process to be included. In order to make a change to the development plans, 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, contingency 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 9 for definitions of major and minor). All amendments requiring a change to the Construction Footprint will need to be approved by the Minister for Planning in accordance with the Incorporated Document. Any change to the Incorporated Document will require an amendment to the relevant planning scheme. Any amendment to the EMF or EDSs will need to be prepared to the satisfaction of the Secretary to DEECA.
- 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:

1. The Contractor or LMW will raise a change request via the Construction Change Request and Assessment Form
2. An assessment of the revision type (Administrative, Minor or Major) will be completed and agreed by the Contractor, IEA and LMW and where considered Minor or Major recorded in a Construction Change Request and Assessment Form
3. Assessment of the impact of the change and the subsequent outcome will be recorded in the Construction Change Request Form and reported in accordance with Sections 8.3.3 and 9

The Construction Environmental Management Plan will also incorporate any additional 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 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
- EPA

- Swan Hill Rural City Council
- LMW
- GMW
- Roads Corporation
- CFA
- Department of Transport.

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 construction of the Vinifera and Nyah 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 Vinifera and Nyah projects. To support this, the monitoring requirements for the Vinifera and Nyah 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 Vinifera and Nyah projects' 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 development of the Vinifera and Nyah projects are controlled and that beneficial environmental outcomes to be achieved by the Vinifera and Nyah 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 based on the environmental risk profile of the relevant construction works and activities. 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 the IEA and 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 to:
 - 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, that:

- has sufficient qualifications and experience to discharge its responsibilities under this EMF;
- meets the criteria specified in AS/NZS ISO 19011:2019 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 development of the strategies, plans and sub-plans will be in accordance with the EDSs. This includes the process and timing for consultation with relevant persons including statutory authorities such as Councils and water authorities, or 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 EDSs.

Where an EDS requires something to be done with 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 the agreed 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 4.4.5 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 for 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.

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

Changes to infrastructure after the expiration of the construction period, as defined by the Incorporated Document, will be subject to a separate assessment and 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 1 will be adopted in those change management processes:

Table 1: Change management definitions

Revision Type	Definition / Criteria	Notification / Consultation / Approval / Reporting required
Administrative	<ul style="list-style-type: none"> General changes such as updates to formatting, references and readability. 	<ul style="list-style-type: none"> No notification, consultation, approvals or reporting required, however version control must be applied. Revisions undertaken by the agency who prepared the document.
Minor	<ul style="list-style-type: none"> 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. 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 For example in operation: if there is a change in the responsibility for an obligation 	<ul style="list-style-type: none"> Consultation and approval required by relevant agency as outlined in Sections 7.3.1 and 8.2.2 Notification to Secretary to DEECA prior to change being implemented. Reporting as part of construction environmental performance report or Operational Environmental Performance Report
Major	<ul style="list-style-type: none"> Significant change to environmental management practices on site, work methods or scope that result in increased or new environmental risks or practices 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) 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 For example in operation: an obligation is deemed to be no longer necessary 	<ul style="list-style-type: none"> Consultation and approval required by relevant agency as outlined in Sections 7.3.1 and 8.2.2 - prior to change being implemented. Reporting as part of construction environmental performance report or Operational Environmental Performance Report 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 Environment Report process

Mallee CMA started working with key stakeholders and interested community groups to develop the concept for the Vinifera and Nyah projects in 2010.

Informing the Environment Report and the development of this EMF, 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 Vinifera and Nyah projects. It outlined the program of communication and engagement activities that were delivered as part of the Environment Report process. It also identified opportunities for the public to provide feedback on and input into the Environment Report process. 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 advise on the adequacy of the Environment Report documentation, including the EMF. The TRG, comprising government agencies, regional authorities and councils, reviewed all Environment Report 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 Vinifera and Nyah projects communications and engagement strategy is described in the Environment Report (in particular Chapter 7 Communications and engagement⁴ and Attachment IX Stakeholder and community engagement report⁵). Attachment IX provides further details on the consultation plan and the consultation and engagement activities – including with the TRG – undertaken for the Vinifera and Nyah projects.

After the completion of the Environment Report, 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 Environment Report and submissions and provided independent advice to the Minister for Planning. This advice and the subsequent assessment and recommendation by the Minister for Planning⁶ 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:

- Department of Transport and Planning (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 CMA

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.

⁴ <https://media.caapp.com.au/z1a5p3.pdf>

⁵ <https://media.caapp.com.au/8zeasc.pdf>

⁶ https://www.planning.vic.gov.au/_data/assets/pdf_file/0024/686301/VMFRP_Vinifera-Nyah_Ministers-Assessment.pdf

Memos were circulated to the relevant agencies on 13 March 2025 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 30 May 2025. Further feedback was received from IAU, and the outcomes of subsequent discussions are reflected within this EMF.

Further consultation on the updates to this EMF (in converting Chapter 20 of the Environment Report 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 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 1 are based on the final specialist assessments, and may be updated following the outcomes of the Public Display, Standing Inquiry and Advisory Committee and the Minister’s Assessment.

Table 1: EDS for the Vinifera and Nyah projects

Environmental Delivery Standard		Project phase	Responsibility
EMF1	<p>Environmental Management System</p> <p>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.</p>	Design, Construction	Contractor
EMF2	<p>Construction Environmental Management Plan</p> <p>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.</p> <p>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.</p>	Construction	Contractor
EMF3	Operational management	Operation	<p>Mallee CMA</p> <p>LMW</p>

Environmental Delivery Standard	Project phase	Responsibility
<p>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:</p> <ul style="list-style-type: none"> • Operation Environmental Management Plan • Environmental Water Management Plan • Seasonal Watering Plan • Operating Plan • Operations and Maintenance Plan. <p>The development of the Operational management plans must include consultation with relevant stakeholders as listed in the Environmental Management Framework and as required under any statutory approvals. Allowance of sufficient review time in agreement with the relevant stakeholders is to be included in the development process timeline.</p>		
<p>EMF4</p> <p>Operation performance management</p> <p>Operation of the projects will be monitored, evaluated and reported on in accordance with:</p> <ul style="list-style-type: none"> • Operation Environmental Management Plan • Ecological Monitoring, Evaluation and Reporting Plan • Socio-economic Monitoring, Evaluation and Reporting Plan • Environmental Watering Management Plans <p>Annual Operational Environmental Performance Reports will be prepared to report on performance against the EDSs and other operational obligations.</p> <p>As part of this process the Plans will address the management of, and access to, baseline and monitoring data.</p> <p>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.</p>	Operation	Mallee CMA

Environmental Delivery Standard		Project phase	Responsibility
ACH1	Cultural Heritage Management Plan Comply with the Cultural Heritage Management Plans No. 16900 (Nyah) and No.16901 (Vinifera) approved by First Peoples – State Relations under the <i>Aboriginal Heritage Act 2006</i> .	Design and construction	LMW Contractor
ACH2	Connection to Country Integrate Aboriginal knowledge, values, and aspirations into the planning, delivery and evaluation of the Nyah and Vinifera projects. Create opportunities for enhancing and sharing cultural connection to Country.	Design, operation and construction	Mallee CMA Parks Victoria
ACH3	Cultural Heritage Management – Operation 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: <ul style="list-style-type: none"> Undertake a risk-based approach to identify, avoid and minimise risks (where practicable) to cultural heritage in (and immediately adjacent to) the Maximum Inundation Area in consultation with Registered Aboriginal Parties/Traditional Owners and interested parties (as applicable), and 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). 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	Mallee 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	<p>Aboriginal Cultural Heritage Inundation Assessment</p> <p>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.</p>	Construction	LMW
AQ1	<p>Construction air quality management: dust</p> <p>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 requirements of the <i>Environment Protection Act 2017</i>, subordinate legislation and other relevant statutory requirements and guidelines. Measures to include:</p> <ul style="list-style-type: none"> • A process for confirming all sensitive receptors within 350 metres of active construction sites • Apply dust suppression on unsealed roads/tracks and areas to the extent practicable for reducing impacts within 350m of stationary human sensitive receptors • Vehicle loads on public roads to be covered when carrying dust (or litter) generating material • Setting speed limits for construction vehicles (in accordance with the Traffic Management Plan required by EDS TT2) to reduce dust as far as practicable • 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 • Manage stockpile areas to minimise dust (e.g. through compaction, lining, covering, wetting or use of a binding agent) 	Construction	Contractor

Environmental Delivery Standard	Project phase	Responsibility
<ul style="list-style-type: none"> Environment inspections as detailed in the Construction Environmental Management Plan to include dust observations and recording of inspection results Contractors will be required to implement measures where appropriate during the construction phase of the project with reference to, and in accordance with, the following publications: <ul style="list-style-type: none"> Managing stockpiles (EPA Publication 1895) Managing soil disturbance (EPA Publication 1894) Managing truck and other vehicle movement (EPA Publication 1897) Undertake visual observations of nuisance dust and 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. <p>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 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.</p>		
<p>Dust nuisance and complaints</p> <p>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.</p>	Construction	Contractor
<p>Pumping equipment</p>	Operation	LMW Mallee CMA

Environmental Delivery Standard		Project phase	Responsibility
	All pumping infrastructure involving diesel plant to be serviced within appropriate servicing frequencies and maintained to manufacturer specifications (where available).		
BF1	<p>Bushfire management during operation</p> <p>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:</p> <ul style="list-style-type: none"> • 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. • 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. • Prepare guidelines for operational or maintenance activities on Total Fire Ban days, and during the Fire Danger Period, including requirements to adhere to any relevant restrictions as applicable. <p>Before a watering event notify landowners 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.</p>	Operation	<p>LMW</p> <p>Mallee CMA</p> <p>Parks Vic (as land manager)</p>
CM1a	<p>Contaminated land duties</p> <p>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 <i>Environment Protection Act 2017</i>, the <i>Environment Protection Regulations 2021</i>, and</p>	Construction	Contractor

Environmental Delivery Standard	Project phase	Responsibility
<p>the following publications as appropriate and as amended or replaced from time to time:</p> <ul style="list-style-type: none"> • EPA Victoria, 2022, Publication 2008 Notifiable contamination guideline – Duty to notify contaminated land • EPA Victoria, 2021, Publication 1827.2 Waste classification assessment protocol • EPA Victoria, 2021, Publication 1828.2 Waste disposal categories – characteristics and thresholds • EPA Victoria, 2021, Publication 1799.2 Permissions scheme policy • 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 • WorkSafe Victoria, 2010, Asbestos Contaminated Soil Guidance Note • Australian Standard AS1940 Storage Handling of Flammable and Combustible Liquids • EPA Victoria, 2020, Publication 1834 Civil construction, building and demolition guide • EPA Victoria, 2018, Publication 1698: Liquid storage and handling guidelines • EPA Victoria, 2021, Publication 1756.2, Summary of waste framework • EPA Victoria, 2021, Publication 1915, Contaminated land policy • EPA Victoria, 2021, Publication 1940, Contaminated land: understanding section 35 of the Environment Protection Act 2017 • EPA Victoria, 2021, Publication 1820.1, Construction – Guide to preventing harm to people and the environment. <p>Specifically, the Construction Environmental Management Plan must include:</p> <ul style="list-style-type: none"> • 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. • 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 • A framework for managing waste to achieve compliance with the Duties and regulatory requirements including classification, transportation and disposal at a lawful place. This will include minimisation of waste generation and implementation of the waste hierarchy 		

Environmental Delivery Standard	Project phase	Responsibility
<ul style="list-style-type: none"> • 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 • Management measures to minimise chemical and fuel storage (including hazardous materials and dangerous goods) onsite, and store in accordance with EPA and Safe Work Australia requirements in the legislation and guidelines listed above. This must include: <ul style="list-style-type: none"> – Creating and maintaining a dangerous goods register – Disposing of any hazardous materials, including asbestos, in accordance with the Environmental Protection Regulations 2021 and relevant guidelines – Implementing requirements for the installation of bunds and precautions to reduce the risk of spills – Contingency and emergency response procedures to handle fuel and chemical spills, including availability of on-site hydrocarbon spill kits. • 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 Work Health and Safety (WHS) Act and Regulations and Safe Work Australia. 		
<p>Water, Soils and Waste Management Sub-plan</p> <p>A Water, Soils and Waste Management plan must be prepared as a sub-plan to the Construction Environmental Management Plan to:</p> <ul style="list-style-type: none"> • Comply with the General Environmental Duty as per the <i>Environment Protection Act 2017</i> • 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 • 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 Environmental Protection Regulations 2021 and supporting EPA guidelines. 	Construction	Contractor

Environmental Delivery Standard	Project phase	Responsibility
<p>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:</p> <ul style="list-style-type: none"> - Preparation of a sample analysis and quality plan and conceptual site models - Details of management measures to be implemented for sustainable handling and transport of spoil for the protection of human health and the environment - 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) - 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 - Provide a framework for material and waste tracking - 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. 		
<p>Soil characterisation</p> <p>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 or hazardous conditions or soil sensitivity or degradation at the following locations:</p> <p>CM1c</p> <ul style="list-style-type: none"> • Lay down areas and compounds • Other areas where soil or materials will be handled, or chemicals will be stored / used • Proposed construction sites where acid sulfate soils may exist • Proposed construction sites with soils prone to erosion or other instability (including dispersive, saline, reactive and/or soft soils) <p>This characterisation will include:</p>	Construction	Contractor

Environmental Delivery Standard	Project phase	Responsibility
<ul style="list-style-type: none"> Review of desktop information (including the ER 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, for example, publicly available information such as from EPA Victoria) 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 Depending on the outcomes of the tasks above, targeted soil sampling at locations identified as having potential to contain contaminated material. <p>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.</p> <p>Soil will be managed in accordance with the Water, Soils and Waste Management Sub-plan as per EDS CM1b.</p>		
<p>CM2 Acid sulfate soils</p> <p>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:</p> <ul style="list-style-type: none"> National Guidance for the Management of Acid Sulfate Soils in Inland Aquatic Ecosystems Guidance for the dewatering of acid sulfate soils in shallow groundwater environments <i>Environment Protection Act 2017</i> General environmental duty Environment Protection Regulations 2021 National Acid Sulfate Soils Guidance – A synthesis National acid sulfate soils sampling and identification methods manual Guidelines for the dredging of acid sulfate soil sediments and associated dredge spoil management Land manager policies and requirements. <p>The ASMP must include measures to:</p>	Construction	Contractor

Environmental Delivery Standard	Project phase	Responsibility
<ul style="list-style-type: none"> Identify areas of acid sulfate soils and potential acid sulfate soils within the proposed construction footprint Characterise and manage acid sulfate soils in accordance with: <ul style="list-style-type: none"> EPA Victoria, 2009, Publication 655.1 Acid Sulfate Soil and Rock Murray Darling Basin Authority, 2010, Detailed Assessment of Acid Sulfate Soils in the Murray-Darling Basin Manage stockpile areas to prevent release of acid to the environment Identify suitable sites for management, re-use or disposal of acid sulfate soil and rock in accordance with EPA Victoria requirements. 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. 		
<p>Contaminated land duties</p> <p>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:</p> <ul style="list-style-type: none"> 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 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: <ul style="list-style-type: none"> Measures to minimise chemical and fuel storage on site and store hazardous materials and dangerous goods in accordance with EPA and Safe Work 	Operation	Mallee CMA LMW Parks Victoria

Environmental Delivery Standard	Project phase	Responsibility
<p>Australia requirements in the legislation and guidelines listed in EDS CM1a. This must include:</p> <ul style="list-style-type: none"> › Creating and maintaining a dangerous goods register › Disposing of any hazardous materials, including asbestos, in accordance with the Environmental Protection Regulations 2021 and relevant guidelines › Implementing requirements for the installation of bunds and precautions to reduce the risk of spills › Contingency and emergency response procedures to handle fuel and chemical spills, including availability of on-site hydrocarbon spill kits. 		
<p>Native vegetation and habitat design minimisation</p> <p>Avoid and, where avoidance is not practicable, minimise native vegetation removal and ensure that the removal of native vegetation will not exceed 12.8 ha for the Vinifera project and 14.1 ha for the Nyah project.</p> <p>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:</p> <ul style="list-style-type: none"> • 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 ER). • 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. • 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 	Design and construction	Contractor

Environmental Delivery Standard		Project phase	Responsibility
	alignment to avoid and minimise impacts to threatened species and Large or Very Large Trees). Design and implement no-go zones to protect ecological values, and provide detailed maps of their location in the Construction Environmental Management 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	<p>Construction biodiversity administrative processes</p> <p>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:</p> <ul style="list-style-type: none"> • The matters required by EDS E2b, E2c, E2d, and E2e. • Contractor inductions to be undertaken so that all staff onsite are aware of the ecological values (and other values) to be protected during construction • 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) • If EPBC Act or FFG Act listed threatened species (individuals or population) are encountered which were not assessed within the Environment Report assessment: <ul style="list-style-type: none"> – Stop works at that location and implement appropriate measures (e.g. temporary fencing will be installed), pending discussions with DCCEEW/DEECA as relevant – Notify a suitably qualified ecologist to determine the significance of any potential impacts 	Construction	Contractor

Environmental Delivery Standard		Project phase	Responsibility
	<ul style="list-style-type: none"> – Seek any relevant approvals from the relevant authority if removal/impacts cannot be avoided. • Should works be required outside the approved Construction Footprint, follow the change process as detailed in the Construction Environmental Management Plan which includes consideration of biodiversity (e.g. native vegetation, threatened species) implications, including approval requirements, re-quantification of impacts. 		
E2b	<p>Construction vegetation management</p> <p>The Native Flora and Fauna Management Sub-Plan must include the following requirements for vegetation removal activities:</p> <ul style="list-style-type: none"> • Clearly identify the trees to be removed. Trees that may be or are to be retained, must not be marked in any way • Delineate no-go zones incorporating Tree Protection Zones of Large Trees and threatened flora species populations to be retained to prevent access during construction • Tree protection measures to be implemented to respond to arborist recommendations (e.g. tree protection zone fencing, mats) where appropriate • Minimise removal of vegetation approved for removal/impacts (eg. Reducing the number of trees felled) • 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 	Construction	Contractor

Environmental Delivery Standard	Project phase	Responsibility
<ul style="list-style-type: none"> • 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 • Vegetation clearing, pruning and excavation controls and protection measures, including the following protocols: <ul style="list-style-type: none"> – 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 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 – fauna salvage by an authorised and experienced wildlife handler that is to be onsite during all vegetation removal/felling/lopping activities. – two-stage clearing and phased/staged removal to retain trees for as long as possible wherever practicable – minimised clearing during spring where practicable. 		
<p>E2c Construction fauna management</p> <p>The Native Flora and Fauna Management Sub-Plan must include the following requirements for terrestrial and aquatic fauna management during construction:</p> <ul style="list-style-type: none"> • 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 <i>Wildlife Act 1975</i>). 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 • All fencing must be fauna friendly to minimise risk of wildlife injury from collision and include provision of egress points, for example: 	Construction	Contractor

Environmental Delivery Standard		Project phase	Responsibility
	<ul style="list-style-type: none"> - 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) - 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 - No barbed or razor wire will be used • 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 • Implement measures to minimise noise, vibration and lighting impacts on known threatened fauna species and habitat, including: <ul style="list-style-type: none"> - 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 - 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 - 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	<p>Construction weed and pest management</p> <p>The Native Flora and Fauna Management Sub-Plan must include the following requirements and measures to mitigate weed (terrestrial and aquatic) and pathogen introduction and spread:</p>	Construction	Contractor

Environmental Delivery Standard	Project phase	Responsibility
<ul style="list-style-type: none"> Vehicle, personnel, material and equipment hygiene protocols (including measures required to prevent the spread or transmission of Chytrid Fungus as per <i>Hygiene protocols for the control of diseases in Australian frogs</i> (Murray et al. (2011)) Weed, pest animal and pathogen management and monitoring and reporting requirements. Biosecurity check/inspections of all vehicles entering the Construction Footprint for plant material, seeds and soils containing organic matter. Following this initial check upon entry, biosecurity checks are not required each time the vehicle comes into the Construction Footprint if the vehicle has only travelled on bitumen or well-established gravel or dirt roads (i.e. no vegetation growing within roads) outside the Construction Footprint. <p>These measures must be auditable and linked to management outcomes such as:</p> <ul style="list-style-type: none"> 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 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 Evaluate disturbed areas post-construction and implement rehabilitation in accordance with EDS E2e. To avoid and prevent 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). 		
<p>Construction rehabilitation management</p> <p>The Native Flora and Fauna Management Plan must include the following requirements for rehabilitation following construction:</p> <ul style="list-style-type: none"> Where possible and appropriate, reuse timber and logs from felled trees on site with habitat improvement uses prioritised 	Construction	Contractor

Environmental Delivery Standard	Project phase	Responsibility
<ul style="list-style-type: none"> • 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 • The projects must include rehabilitation of all affected areas following construction within the timeframe specified by the land manager. • 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 locally appropriate indigenous species in areas of native vegetation pre-construction or soil stabilising non-invasive species in other areas), as agreed with the land manager • Borrow sites rehabilitation works are to be addressed in Property Management Plans, developed in agreement with the relevant land owner <p>Rehabilitation should include as appropriate topsoil, leaf litter, log reinstatement, weed monitoring and management and targeted revegetation as agreed with the land manager.</p>		
<p>Aquatic fauna management</p> <p>In addition to the handling and salvage protocols for aquatic fauna as detailed in EDS E2c implement the following:</p> <ul style="list-style-type: none"> • Where works in waterbodies require coffer-damming that completely blocks the waterway: <ul style="list-style-type: none"> – Clearance of coffer dams during the de-watering process and following flood events which over-top the coffer dam – 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 – Implement flow-through via pumping from upstream to downstream to maintain water quality and levels on both sides of the coffer dam 	Construction	Contractor

Environmental Delivery Standard		Project phase	Responsibility
	<ul style="list-style-type: none"> – 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 • 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. 		
E2g	<p>Hollow replacement</p> <p>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:</p> <ol style="list-style-type: none"> 1. nominate priority hollow-dependent fauna species on the basis of suitable evidence of their habitat requirements within the impacted project area 2. 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 3. require supplementary nesting sites/artificial hollows to be installed in adjacent areas prior to the removal of large hollow-bearing trees; 4. be implemented progressively over a ten-year period with appropriate monitoring to ensure its cost-effectiveness <p>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.</p>	Construction	LMW
E2h	Site specific additional measures – Regent Parrot	Construction	Contractor

Environmental Delivery Standard	Project phase	Responsibility
<ul style="list-style-type: none"> Implement measures to avoid and minimise impacts on Regent Parrot including (unless otherwise agreed with DCCEW and DEECA): <ul style="list-style-type: none"> Removal/lopping/felling of active nesting trees, if required, must be done outside the breeding season 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 vehicle transit, where vehicles are simply using tracks for access to construction sites or routine track maintenance Where construction occurs within 350 metres of an active nesting tree during the Regent Parrot breeding season (August to December November inclusive), undertake monitoring, consistent with the outlined in Table 13-5 of Specialist Assessment B to the ER, in accordance with the Native Flora and Fauna Management Sub-Plan. <ul style="list-style-type: none"> 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 ER. Measures to avoid and minimise impacts to Regent Parrot implemented as per this EDS will be documented and submitted to DEECA Loddon Mallee Region at the completion of construction 		
<p>Pest Plant and Animal Monitoring and Management Plan - Terrestrial</p> <p>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, including carp. The Plan may be prepared for multiple VMFRP projects, and will include:</p> <ul style="list-style-type: none"> A monitoring program to indicate pest presence and activity, which will inform adaptive management and treatment measures 	Operation	Parks Victoria

Environmental Delivery Standard		Project phase	Responsibility
	<ul style="list-style-type: none"> • Thresholds for implementation of contingency management measures • Contingency measures, which may refer to existing policies, practices and procedures. <p>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.</p>		
E3b	<p>Pest Plant and Animal Monitoring and Management Plan - Aquatic</p> <p>Prepare (prior to the commencement of operation) and implement a Pest Plant and Animal Monitoring and Management Plan to detect and manage aquatic pest presence and activity due to managed environmental watering events. The Plan may be prepared for multiple VMFRP projects, and will include:</p> <ul style="list-style-type: none"> • 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. <p>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.</p>	Operation	Mallee CMA
E3c	<p>Carp Monitoring and Management</p> <p>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).</p>	Operation	Mallee CMA
E4a	Overall biodiversity improvement – Vinifera	Operation	Mallee CMA

Environmental Delivery Standard		Project phase	Responsibility
	<p>Operate the Vinifera 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.</p> <p>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):</p> <ul style="list-style-type: none"> • Operation Environmental Management Plan • Environmental Water Management Plan • Seasonal Watering Proposal • Operating Plan • Operations and Maintenance Plan • Monitoring, Evaluation and Reporting Plan 		
E4b	<p>Overall biodiversity improvement – Nyah</p> <p>Operate the Nyah 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.</p> <p>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):</p> <ul style="list-style-type: none"> • Operation Environmental Management Plan • Environmental Water Management Plan • Seasonal Watering Proposal • Operating Plan • Operations and Maintenance Plan • Monitoring, Evaluation and Reporting Plan 	Operation	Mallee CMA
E5	<p>Assessment of overall improvement to biodiversity</p> <p>Outcomes of the updated hydraulic analysis (refer EDS SW4) and further assessment should (if applicable) be used to inform any updated assessments of overall improvement to biodiversity that may be provided to the Secretary of Department</p>	Design	LMW

Environmental Delivery Standard	Project phase	Responsibility
<p>of Energy, Environment and Climate Action under Clause 4.6.3 of the incorporated document.</p> <p>The further assessment that should, if applicable, inform the AOIBs relates to up-to-date understanding of:</p> <ul style="list-style-type: none"> the existing distribution of Ecological Vegetation Classes (EVCs) within the maximum inundation area, site specific hydrological analyses of EVCs together with A guide to water regime, salinity ranges and bioregional conservation status of Victorian wetland Ecological Vegetation Classes (2016, Frood and Papas), predicted responses of EVCs under the VMFRP (with Basin Plan) scenario and proposed initial operating scenarios, optimal inundation regimes to achieve specific outcomes for EVCs potential losses of vegetation that could result from managed inundation regimes, the frequency and durations of flood events that would inundate each EVC under relevant flow scenarios. <p>If warranted by the above, the AOIBs shall be updated to</p> <ul style="list-style-type: none"> analyse the location, maximum extent, durations and depths of inundation of different EVCs for representative flood events, using both mapped and tabular presentations as appropriate assess the preferred frequencies, durations and depth ranges of inundation for each EVC based on the hydraulic analysis of existing patterns, to understand potential present the extent of appropriate watering in the preferred depth range, “over-” and “under-watering” of each EVC within the MIAs, relative to the preferred EVC inundation depths, for representative flood events. 		
<p>E6 Native Fish Stranding</p> <p>Develop and test the success of a native fish exit strategy to allow native fish to migrate from the floodplain.</p>	Operation	Mallee CMA

Environmental Delivery Standard		Project phase	Responsibility
	<p>In testing the success of a native fish strategy, the Catchment Management Authority will monitor and evaluate native fish strandings associated with drawdown phase. 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.</p> <p>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.</p>		
GS1	<p>Minimising erosion and sedimentation through design</p> <p>Design the projects having regard to erosion risks and soil characterisation, for example dispersive, saline, reactive and/or soft soils, with the objective of dispersing water flows and minimising water velocities to minimise the potential for erosion and sedimentation, to the extent practicable.</p>	Design	Contractor
GS2	<p>Erosion and Sediment Control Plan</p> <p>The Construction Environmental Management Plan must include an Erosion and Sediment Control Plan which details measures to:</p> <ul style="list-style-type: none"> • Minimise clearance of vegetation and retain existing vegetation wherever possible, particularly along drainage lines and waterways, steep slopes and areas with unstable soils • Stabilise exposed soil where applicable with the appropriate structural materials and media for the construction activities (e.g. stabilisation matting, rock armour or vegetation) • Manage vehicle movement to designated roads and access areas as detailed in the Traffic Management Plan (EDS TT2) • 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 • Install sediment controls around stockpiles to contain coarse soil and sediment, as applicable to prevent sedimentation of watercourses 	Construction	Contractor

Environmental Delivery Standard		Project phase	Responsibility
	<ul style="list-style-type: none"> If required, treat dispersive or reactive soils prior to importation and use in construction. 		
GS3	<p>Soils and landform stability</p> <p>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.</p>	Operation	LMW
GW1	<p>Construction groundwater management</p> <p>The Construction Environmental Management Plan must include measures to manage groundwater impacts in accordance with the requirements under the <i>Environment Protection Act 2017</i>, subordinate legislation and other relevant statutory requirements and guidelines.</p> <p>Measures must include:</p> <ul style="list-style-type: none"> Avoid extracting contaminated groundwater wherever possible Seeking advice from a suitably qualified person on the most suitable way to manage contaminated groundwater 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 Dewatering must be restricted to the minimum volume required Spills of contaminants must be avoided and managed in accordance with EDS CM1. 	Construction	Contractor
GW2	<p>Operational groundwater management</p> <p>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 to local floodplain values and in accordance with the relevant</p>	Operation	Mallee CMA

Environmental Delivery Standard		Project phase	Responsibility
	<p>Catchment Management Authority's salinity management program that complies with <i>Basin Salinity Management 2030</i> or its successor.</p> <p>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 Water Management Area to adequately detect and interpret any changes in water levels and salinity.</p> <p>The operation of the Projects should be reviewed and, if necessary, modified through adaptive management, if a significant trend of increasing salinity or related effects is identified at any of the monitoring sites.</p>		
HH1	<p>Management of Historical Heritage during construction</p> <p>The Construction Environmental Management Plan must include:</p> <ul style="list-style-type: none"> • 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 <i>Heritage Act 2017</i> 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 • Measures to manage historical heritage impacts including physical barrier protection and/or exclusion zones to manage unplanned effects • Details around training and awareness in relation to historic heritage places and obligations (e.g. Project induction toolbox talks and staff inductions) • Requirement to obtain any necessary consent under the <i>Heritage Act 2017</i> prior to the disturbance of a known archaeological site. 	Construction	Contractor
HH2	<p>Management of Historical Heritage during operation</p> <p>In accordance with the <i>Heritage Act 2017</i>, manage historical heritage impacts including:</p>	Operation	<p>Mallee CMA</p> <p>Parks Victoria</p>

Environmental Delivery Standard		Project phase	Responsibility
	<ul style="list-style-type: none"> Details around training and awareness in relation to historic heritage places and obligations (eg. Project induction toolbox talks and staff inductions) 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 <i>Heritage Act 2017</i> 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 Apply for and obtain any necessary consent under the <i>Heritage Act 2017</i> where an archaeological site is to be disturbed, and comply with the conditions of that consent. 		
LV1	<p>Avoid and minimise visual impacts through design</p> <p>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.</p>	Design and construction	Contractor
LV2	<p>Avoid and minimise visual impacts during construction</p> <p>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 screening measures such as hoarding where necessary. Remove construction equipment and temporary construction infrastructure when no longer required.</p>	Construction	Contractor
LV3	<p>Minimise construction and operation lighting impacts</p> <p>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).</p>	Construction and operation	Contractor Mallee CMA

Environmental Delivery Standard		Project phase	Responsibility
	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)).		
NV1	<p>Construction noise and vibration management</p> <p>The Construction Environmental Management Plan must include process and measures to ensure the risk of harm from construction noise and vibration is minimised so far as reasonably practicable at all times in accordance with the obligations under the <i>Environment Protection Act 2017</i>, subordinate legislation and the provisions of other relevant Victorian statutory requirements and guidelines, including the Civil Construction, Building and Demolition guide (CCBD guide), EPA publication 1834. The Construction Environmental Management Plan must include (but not be limited to) measures, such as:</p> <ul style="list-style-type: none"> • Review activities to be conducted and the equipment to be used • Investigate, and adopt wherever reasonably practicable, opportunities to reduce noise emissions at source, and eliminate or otherwise reduce features that increase the impacts of noise, such as tonality, impulsiveness, intermittency and high energy in the low frequency range • Fit and maintain appropriate mufflers on vehicles • Maximise shielding taking topography, existing structures and equipment location into consideration • Implement contingency measures wherever there is risk of harm associated with the residual noise and vibration (for example respite periods or alternative accommodation • Restrict noisy activities to the normal working hours of the CCBD guide (between 7 am and 6 pm weekdays and 7 am to 1 pm Saturday) except where the activity is justified and approved to be: <ul style="list-style-type: none"> – unavoidable works as defined in the CCBD guide, or – Managed-impact works as defined in the CCBD guide. 	Construction	Contractor

Environmental Delivery Standard	Project phase	Responsibility
<ul style="list-style-type: none"> • A process must be established, in consultation with relevant stakeholders, for the Independent Environmental Auditor (IEA) to approve out-of-hours works, prior to the works being conducted, following assessment by the IEA that: <ul style="list-style-type: none"> – the justification for proposed out of-hours unavoidable works is consistent with the definition of unavoidable works in the CCBD guide – the justification for proposed out of-hours managed impact works is consistent with the definition of managed impact works in the CCBD guide – all reasonably practicable measures will be implemented to mitigate noise and vibration and their impacts, including contingency measures wherever relevant. • 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 • Provide the opportunity for the community to raise issues / concerns and respond to these in accordance with EDS SB1 • Setting speed limits for construction vehicles (in accordance with EDS TT2) to minimise vibration and noise effects • 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). 		
<p>Operational noise management</p> <p>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).</p>	Operation	Mallee CMA
<p>Waste management</p>	Operation and construction	LMW Mallee CMA

Environmental Delivery Standard		Project phase	Responsibility
	<p>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:</p> <ul style="list-style-type: none"> • Litter management • Construction and demolition wastes • Organic wastes. 		
SB1	<p>Community and Stakeholder Engagement Management Plan</p> <p>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:</p> <ul style="list-style-type: none"> • 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. • Provide advanced notification to potentially affected stakeholders (i.e. private landowners and leaseholders) of the extent and timing of access disruptions associated with construction and commissioning activities. • 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. • 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. • Establish a project specific hotline to receive queries or complaints. • Investigate and respond to community complaints or enquiries, as soon as practicable. • Prepare incident notification and governance protocols for relevant Councils and land managers <p>Timing and type of notification to potentially affected stakeholders will be determined in consultation with the relevant stakeholder prior to the</p>	Construction	Contractor

Environmental Delivery Standard		Project phase	Responsibility
	commencement of construction (other than preparatory buildings and works), and may be amended from time to time, subject to agreement.		
SB2	<p>Minimise social and business impacts – Construction</p> <p>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.</p>	Construction	Contractor
SB3	<p>Community and Stakeholder Engagement activities – Operation</p> <p>Catchment Management Authorities to continue to deliver communication and stakeholder engagement activities in accordance with Victoria’s Catchment 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:</p> <ul style="list-style-type: none"> • 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 • Advanced notification to potentially affected private landowners and leaseholders of the extent and timing of access disruptions associated with commissioning and operational activities. • 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. • 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. • A process to receive queries or complaints and respond to these. • A protocol for how community expectations regarding potential adverse effects, in particular adverse anoxic (blackwater) events, will be managed at identified stages of inundation events. 	Operation	Mallee CMA

Environmental Delivery Standard		Project phase	Responsibility
	Timing and type of notification to potentially affected stakeholders will be agreed prior to the commencement of operation, and may be amended from time to time, subject to agreement.		
SW1	<p>Surface water management – Construction</p> <p>The Construction Environmental Management Plan must include processes and measures to manage surface water in accordance with the relevant requirements of the <i>Environment Protection Act 2017</i>, 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:</p> <ul style="list-style-type: none"> • Manage sediment and erosion during construction in accordance with EDS GS2 • Manage storage, handling and transport of materials in accordance with EDS CM1 for the protection of drains and waterway • 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 • Manage dewatering rates to prevent bank slumping • Monitor surface water quality (in accordance with the requirements set out in the CEMP) upstream and downstream from where works occur within a designated waterway* to confirm effectiveness of established controls and implement additional controls as required • Include contingency plans should flooding occur during construction to avoid spills, erosion and discharge of poor quality water to waterways. <p>* Designated waterways are named or unnamed, permanent or seasonal, and range in size from a river to a natural depression.</p>	Construction	Contractor
SW2	<p>Surface water management – Operation</p> <p>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</p>	Operation	Mallee CMA

Environmental Delivery Standard	Project phase	Responsibility
<p>including identification of overarching operating risks and mitigation measures associated with the delivery of environmental water.</p> <p>The Catchment Management Authority is to develop the Operating Plan in consultation with relevant stakeholders prior to the first watering event.</p> <p>Operation of the project to consider and seek to avoid, minimise and manage where practicable:</p> <ul style="list-style-type: none"> • Adverse anoxic (blackwater) events • Excessive algal growth • Stimulating the proliferation of introduced or pest plants or animals (including Carp) • Native fish stranded on the floodplain during drawdown events • Excessive erosion during filling and drawdown <p>This will include consideration of the following measures as appropriate:</p> <ul style="list-style-type: none"> • 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 the warmer months when conditions are conducive to carp breeding if benefits outweigh the risks associated with Carp proliferation. • Maintain throughflow during managed inundation if appropriate and possible to mitigate anoxic conditions. • 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. • 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. • Develop and test (via monitoring) the success of a native fish exit strategy to allow native fish to migrate from the floodplain • Develop and test the success of a strategy to retain carp on the floodplain • Manage drawdown rates to minimise increase in velocity and shear stress downstream of regulators. 		

Environmental Delivery Standard		Project phase	Responsibility
SW3	<p>Surface water – Monitoring</p> <p>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 <i>Operating Arrangements for the Environmental Water Holdings of the Murray System</i> and the Ecological Monitoring, Evaluation and Reporting Plans).</p>	Operation	Mallee CMA
SW4	<p>Update hydraulic assessment</p> <p>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:</p> <ul style="list-style-type: none"> 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) ‘Difference maps’ should be used in conjunction with mapping of the key hydraulic parameters for each scenario to determine the locations where the key hydraulic parameters will be changed by the Projects, and the magnitude of the change. <p>Outcomes of this hydraulic analysis and further assessment should be used (where applicable) to inform any necessary design or operational changes and updates to any assessment of overall improvement to biodiversity as per EDS E5.</p>	Design	LMW
SW5	<p>Surface water design – regulators, containment banks and spillways</p> <p>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.</p> <p>The design of the containment banks and spillways should facilitate turtle passage.</p>	Design	Contractor
TT1	Safety in road design	Design	Contractor

Environmental Delivery Standard		Project phase	Responsibility
	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.		
TT2	<p>Traffic Management Plan</p> <p>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:</p> <ul style="list-style-type: none"> • 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 • Minimise road closures, access restrictions and disruption to all road users and active users • Provide for safe construction practices in accordance with road authority requirements • Specify vehicle speed limits considering safety, noise, vibration and dust. • Provide alternative routes for affected road users and active users where practicable • Maintain property accesses during construction where practicable or provide alternative access • Maintain emergency service access (as developed in consultation with emergency services) • Notify affected residents and landholders of changes to traffic conditions and access to property for duration of the works • 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) • Monitor weather conditions to reduce the risk of a heavy vehicle travelling into the area during poor weather conditions • Minimise the risk of vehicles getting bogged or stuck due to wet weather (including the requirement for recovery equipment to be on site) • Provide adequate access to heavy vehicles (including adequate vegetation clearance from vehicles) 	Construction	Contractor

Environmental Delivery Standard		Project phase	Responsibility
	<ul style="list-style-type: none"> 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 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
TT4	Safety during operation – signage During operation, the land manager is to provide: <ul style="list-style-type: none"> Advisory signage on closed or inaccessible tracks Public advice regarding changes in-park/forest conditions (eg. Via websites). 	Operation	Parks Victoria (as Land manager)
TT5	Track maintenance program 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 will occur following the outcomes of the Environmental Report assessment process, in consultation with the project partners and to address relevant approval conditions. As described in Sections 7.4.1 and 8.3.1 the updated monitoring programs will 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 will 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 least the first ten years after environmental watering begins.

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 6) 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 6 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 will 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 1: Vinifera and Nyah 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 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

ID & Discipline	Performance objective	Phase	Indicator	Monitoring requirement and parameters	Locations	Frequency	Responsibility
M AE1 Aquatic ecology	To assess the development and maintenance of seasonal populations of small/ medium and large-bodied native fish.	O^	The average abundance of small/ medium and large fish during flood events at the wetlands of Vinifera and Parnee Malloo Creek for years 6 to 10 of VMFRP operations is higher than the average for the Baseline Period.	Boat/backpack electrofishing, fyke netting	Vinifera and Nyah wetlands - six sites as specified in MER program	Measure at time and locations specified in the MER	Mallee CMA
M AE7 Aquatic ecology	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 Geology soils and contamination	Assess water containment and conveyance infrastructure locations with potential for erosion /or sedimentation to inform adaptive management and/or any measures to ensure structural integrity of infrastructure, as well as the condition of waterways within the Project areas and connecting the Project areas to the Murray River.	O^	Visual indicators (e.g., notching, bank slumping) of induced soil, water or wave erosion/sedimentation.	Visual inspections (including photo points) of constructed infrastructure.	Infrastructure locations (including, but not limited to, regulators and containment banks) and section of waterways connecting the Project areas to the Murray River which have been identified as having high risk of erosion.	Before, during and after an environmental watering event	Asset owner (infrastructure) and Mallee CMA (waterways)

ID & Discipline	Performance objective	Phase	Indicator	Monitoring requirement and parameters	Locations	Frequency	Responsibility
M GW1 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.	<p>Monitoring to occur at, or in the vicinity of, the following bores:</p> <ul style="list-style-type: none"> Nyah: WRK119931 WRK119928 WRK119926 Vinifera: WRK119926 WRK119930 26271 26182 26155 26156 119389 119388 <p>plus any additional locations in areas of vegetation potentially at risk from elevated groundwater levels or salinity, to be agreed with Mallee CMA.</p>	<p>Monthly</p> <p>Following the first maximum inundation event, undertake an interim review of monitoring outcomes and identify appropriate adjustments to the monitoring program.</p> <p>Following the second maximum inundation event, undertake a comprehensive review of monitoring outcomes and identify appropriate adjustments to the monitoring program.</p> <p>Including re-assessment of performance against modelling results to confirm the expected effects.</p>	Mallee CMA
M GW2 Groundwater	Identify changes to groundwater quality as a result of environmental watering	O^	Groundwater salinity trends over time compared with the forecast	Groundwater salinity as measured by electrical	Monitoring to occur at, or in the vicinity of, the following bores:	Annual. Following the first maximum	Mallee CMA

ID & Discipline	Performance objective	Phase	Indicator	Monitoring requirement and parameters	Locations	Frequency	Responsibility
				conductivity or total dissolved solids	<ul style="list-style-type: none"> Nyah: WRK119931 WRK119928 WRK119926 Vinifera Forest: WRK119926 WRK119930 26271 26182 26155 26156 119389 119388 <p>plus any additional locations in areas of vegetation potentially at risk from elevated groundwater levels or salinity, to be agreed with Mallee CMA.</p>	<p>inundation event, undertake an interim review of monitoring outcomes and identify appropriate adjustments to the monitoring program. Following the second maximum inundation event, undertake a comprehensive review of monitoring outcomes and identify appropriate adjustments to the monitoring program.</p> <p>Including re-assessment of performance against modelling results to confirm the expected effects.</p>	
M GW3 Groundwater	Identify changes to surface water levels that influence groundwater 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.	Nyah: North Bank Regulator Vinifera: V1 Regulator	Daily. Following the first maximum inundation event, undertake an interim review of monitoring outcomes	Mallee CMA

ID & Discipline	Performance objective	Phase	Indicator	Monitoring requirement and parameters	Locations	Frequency	Responsibility
						and identify appropriate adjustments to the monitoring program. Following the second maximum inundation event, undertake a comprehensive review of monitoring outcomes and identify appropriate adjustments to the monitoring program. Including re-assessment of performance against modelling results to confirm the expected effects.	
M SW1 Surface water	Assess the effect of the project's construction on surface water quality.	C	<u>Routine field-based monitoring:</u> Electrical conductivity (salinity) Turbidity Dissolved oxygen pH Temperature Visual and olfactory inspection for oils and greases, litter and algal growth. If hydrocarbons	Specific monitoring programs for each construction location to be developed and documented in the CEMP prior to project commencement. This will include: Routine monitoring: Assess whether the project's construction is adversely effecting	Specific monitoring programs for each construction location to be developed and documented in the CEMP prior to project commencement. This will include: Routine monitoring: For floodplain creeks and the Murray River – Where there is potential	<u>Routine monitoring:</u> Weekly for one month prior to construction to establish baseline (if water is present) At least weekly during construction whenever water is present, or more frequently during and after: hot weather/ rainfall event.	Construction contractor

ID & Discipline	Performance objective	Phase	Indicator	Monitoring requirement and parameters	Locations	Frequency	Responsibility
			<p>are suspected to be present, a sample will be collected for laboratory analysis of oils and grease and total petroleum hydrocarbons.</p> <p>If algae are suspected to be present, a sample will be collected for laboratory analysis of nutrients (total nitrogen and total phosphorus), chlorophyll and identification of algal species.</p> <p><u>Contingency monitoring:</u></p> <p>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.</p>	<p>surface water quality and if relevant EDS are being implemented and effective.</p> <p>Thresholds for acceptable levels of change in indicators are provided in Table 16-4 of the ER Central Surface Water Assessment. If monitoring downstream of a construction site shows water quality exceeds values in Table 16-4 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.</p> <p>Contingency monitoring: Assess whether the project's construction is adversely effecting surface water. The determination of effect should be based on water quality exceeding</p>	<p>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.</p> <p>Where construction blocks a waterway, monitor within the watercourse both upstream and downstream of that blockage.</p> <p>For wetlands – wetlands that receive surface water inflows from the active area of construction and a reference site (if relevant to individual construction locations).</p> <p>Contingency monitoring Upstream and downstream of affected areas, including multiple downstream sites to</p>	<p>If algae are suspected to be present, a sample will be collected for laboratory analysis.</p> <p><u>Contingency monitoring</u></p> <p>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.</p>	

ID & Discipline	Performance objective	Phase	Indicator	Monitoring requirement and parameters	Locations	Frequency	Responsibility
				thresholds in Table 16-4 of the ER Central Surface Water Assessment that can be attributed to construction activities.	detect extent of potential impact.		
M SW2 Surface water	Assess the effect of environmental watering on surface water quality on the floodplain and within the Murray River.	O^	<p>Indicators are derived from the VMFRP Ecological MER plan (Sparrow et al. 2020) as covariates for enabling assessment of effects on floodplain biota such as fish during inundation events:</p> <p>Flow</p> <p>In-situ (field based) physico-chemical parameters</p> <p>Electrical conductivity (salinity)</p> <p>Turbidity</p> <p>Dissolved oxygen</p> <p>pH</p> <p>Temperature</p> <p>Visual observations for signs of severe blackwater or excessive algal growth.</p>	<p>Specific monitoring programs for each project area and the process for evaluation and reporting against EDS to be developed and documented in the Operation Environmental Management Plan (EDS SW2, SW3) prior to project commencement. This will include:</p> <p>Monitor flow at outlet regulators</p> <p>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</p>	<p>On the floodplain - site(s) to be identified at infrastructure 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.</p> <p>Within the Murray River - Upstream and downstream* of the floodplain return flow (and within the return flow prior to entering the Murray River).</p> <p>* immediately downstream of the floodplain return flow and further downstream if adverse effects are detected after</p>	<p>Baseline water quality will be established in the Murray River and across the floodplain (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.</p> <p>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</p>	Mallee CMA

ID & Discipline	Performance objective	Phase	Indicator	Monitoring requirement and parameters	Locations	Frequency	Responsibility
			<p>Parameters requiring laboratory analysis (as needs basis):</p> <ul style="list-style-type: none"> • Total nitrogen • Total phosphorus • Organic carbon (dissolved and particulate) • Chlorophyll • Algal species identification and quantification (if an algal bloom occurs). 	<p>values exist (e.g. native fish and where throughflow to the Murray River occurs). Assess if relevant EDS are being implemented and are effective.</p> <p>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.</p> <p>Results from managed inundation events should also be used to inform subsequent managed inundation events.</p>	floodplain outflows and the Murray River are mixed.	<p>values. The specific site locations will change as the event progresses and may depend on access limitations.</p> <p>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. Spot monitoring for parameters requiring laboratory analysis if in-situ monitoring indicates degraded water quality that could affect sensitive values.</p> <p>Note: location, frequency of sampling and specific parameters may be adjusted by the relevant water manager in line with</p>	

ID & Discipline	Performance objective	Phase	Indicator	Monitoring requirement and parameters	Locations	Frequency	Responsibility
						access and existing programs.	
M TE2 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. Monitoring of weed cover following construction to identify 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.	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 monitoring, management and further monitoring may be required.	Land manager or as otherwise agreed with land manager (i.e through section 27 consent)
M TE3 Terrestrial ecology	To assess the change in terrestrial and aquatic weed occurrence 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	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	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. The effect of watering is	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
			environmental weeds of aquatic habitats of Victoria) as a result of environmental watering.	(e.g. infestations of high threat weeds using appropriate treatment techniques). This will include: • Vegetation quadrat monitoring to identify species presence.	to be determined through comparison with contrasting water regimes at other VMFRP.		
		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 surveillance program search areas.	Rapid surveillance at high risk locations as specified in Pest Plant and Animal Management Plan. Report on effectiveness of pest plant control through surveillance program.	Annual for at least 15 years, with continued need to be reviewed thereafter every 3 years	Parks Victoria
M TE4 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.	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

ID & Discipline	Performance objective	Phase	Indicator	Monitoring requirement and parameters	Locations	Frequency	Responsibility
					The significance of watering effects will be determined by comparison to control areas outside the MIA.		
M TE5 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 inundation as a result of environmental watering.	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 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 in PPAMP, for at least 15 years, with continued need to be reviewed after every 3 years.	Parks Victoria
M TAE1 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 ER Chapter 6 Project description. This includes:	Monitor the: - level - duration; and - extent of managed environmental watering events.	Within Maximum Inundation Area	At an appropriate interval during the event. CMA/PV to advise on frequency, consistent	Mallee CMA

ID & Discipline	Performance objective	Phase	Indicator	Monitoring requirement and parameters	Locations	Frequency	Responsibility
			<ul style="list-style-type: none"> Vinifera: Vinifera WMA – 335 ha. Nyah: Nyah WMA – 475 ha. 			with current practices.	
M TAE2 Terrestrial and aquatic	To assess improvement in water-dependent vegetation in wetlands and floodplain lakes in response to environmental watering	O*	<p>For wet wetlands:</p> <p>characteristic Plant Functional Groups (PFG) species richness meets target*</p> <p>characteristic PFG cover meets target *</p> <p>For dry wetlands,</p> <p>characteristic PFG species richness meets target*</p> <p>characteristic PFG cover meets target*</p> <p><i>*Targets to be defined in the Environmental Water Management Plan</i></p>	<p>10x10 m wetland vegetation quadrats to document species occurrence (including PFG) and cover-abundance. Saplings also counted.</p> <p>Number of individuals of each threatened flora also counted/estimated.</p>	<p>Sufficient quadrats must be sampled to evaluate the significance of watering effects. The number of quadrats should be weighted according to the extent of EVCs.</p> <p>The effect of watering is to be determined through comparison with contrasting water regimes at other VMFRP sites.</p> <p>Quadrats should include areas of former treeless wetlands that have been recently colonised by River Red-gums.</p> <p>Sufficient transects to sample habitats (including, within or adjoining the inundated area) within which have been assessed to be</p>	<p>Annual quadrat sampling for at least 15 years, with continued need to be reviewed thereafter every 3 years.</p> <p>Sampling within six months of each inundation event for at least 10 years.</p>	Mallee CMA

ID & Discipline	Performance objective	Phase	Indicator	Monitoring requirement and parameters	Locations	Frequency	Responsibility
					suitable for threatened species		
M TE6 Terrestrial ecology	To assess improvement in the understorey of River Red-gum forest and woodland, Black Box woodland and Lignum shrubland in response to environmental watering	O*	<p>For River Red Gum / Black Box / Lignum EWRC sites, characteristic PFG species richness meets target*</p> <p>For River Red Gum / Black Box / Lignum EWRC sites, characteristic PFG species cover meets target*</p> <p><i>*Targets to be defined in the Environmental Water Management Plan</i></p>	10x10 m vegetation quadrats to document species occurrence (including PFGs) and cover- abundance. Saplings counted also.	<p>Sufficient quadrats must be sampled to evaluate the significance of watering effects. The number of quadrats should be weighted according to the extent of EVCs.</p> <p>The effect of watering is to be determined through comparison with contrasting water regimes at other VMFRP sites.</p> <p>Quadrats should include areas where Black Box and/or Acacia stenophylla (Eumong) canopy have died.</p>	Annual for at least 15 years, with continued need to be reviewed thereafter every 3 years	Mallee CMA
		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.	<p>Modelled stand condition to be reported every five years at year 0, 5, 10 and 15.</p> <p>Ongoing field plot data to be collected to validate and verify model as required.</p>	Mallee CMA

ID & Discipline	Performance objective	Phase	Indicator	Monitoring requirement and parameters	Locations	Frequency	Responsibility
M TE7 Terrestrial ecology	To assess the response of native fauna species over time to environmental watering.	O*	<p>Species richness, relative abundance, recruitment, presence of threatened/notable species is meets targets* for:</p> <p>Wetland birds</p> <p>Woodland birds</p> <p>Species richness, relative abundance, recruitment, extent of distribution, presence of threatened/notable species meets targets* for frogs</p> <p><i>* Targets to be defined in the Environmental Water Management Plan</i></p>	<p>Wetland birds – complete counts at wetlands, monitoring of breeding events (multiple counts required)</p> <p>Woodland birds – 20 min 2 ha counts (multiple counts required)</p> <p>Frogs – acoustic detectors with sufficient sampling to detect a significant effect of watering</p>	<p>Wetland birds, woodland birds and frogs at sites established through the MER within the MIA</p> <p>The effect of watering is to be determined through comparison with contrasting water regimes at other VMFRP sites.</p>	<p>Wetland birds – during and after every managed inundation event (up to 6 trips).</p> <p>Woodland birds – twice annually (spring, autumn)</p> <p>Frogs – acoustic detectors during and after each watering event</p> <p>Monitoring to occur for at least 15 years, with continued need to be reviewed thereafter every 3 years.</p> <p>Relevant species are to be reviewed as part of updates to the Ecological MER.</p>	Mallee CMA
M TE9 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^	<p>For River Red Gum trees, crown extent and/or stand condition score is the same or greater than baseline.*</p> <p>For Black Box trees, crown extent and/or stand condition score is the same or greater than baseline.*</p>	Tree condition assessment, including crown condition score either a) based on TLM method or b) crown condition index (Crome 2004).	<ul style="list-style-type: none"> • Margins of the Vinifera and Nyah Maximum Inundation Area dominated by EVC 295 Riverine Grassy Woodland and EVC 816 Sedgy Riverine Forest (as mapped in the ER 	Every three years 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
			*Baseline quadrat data collected prior to commencement of environmental watering.	Note: location, frequency of sampling and specific parameters may be adjusted by the relevant water manager in response to adaptive management and existing programs.	Central Terrestrial Ecology Specialist Assessment)		
MACH1 Aboriginal Cultural Heritage	Identify potential for adverse effects to Ancestral Remains and earth mounds resulting from exceedance of population thresholds of pest and overabundant native species as a result of VMFRP environmental watering	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 environmental watering events.	<p>The locations selected for baseline assessment will be determined in the EWMP (or similar 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.</p> <p>In addition to these sites control sites will be selected in comparable locations where environmental watering is not likely to have an effect.</p>	Baseline assessment prior to each environmental watering event at applicable locations. Subsequent monitoring events to be undertaken as per risk-based approach outlined in EDS ACH3.	<p>Land manager</p> <p>Baseline assessment to be undertaken by a person appropriately qualified in archaeology or heritage management in collaboration with the Registered Aboriginal Parties/Traditional Owners and Interested Parties (as applicable).</p>

ID & Discipline	Performance objective	Phase	Indicator	Monitoring requirement and parameters	Locations	Frequency	Responsibility
					Exact locations to be identified by the Land Manager in consultation with the Traditional Owners and interested parties (as applicable).		
M ACH2 Aboriginal Cultural Heritage	Identify potential adverse effects to specific Aboriginal cultural heritage values (Ancestral Remains) as a result of increased visitation as a result of VMFRP environmental watering	O	N/A – determining baseline condition to inform contingency measures, if required.	Baseline assessment to be undertaken at Ancestral Remains sites prior to environmental watering events.	<p>The selection of locations for baseline assessment 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.</p> <p>In addition to these sites control sites will be selected in comparable locations where environmental watering is not likely to have an effect.</p> <p>Exact locations to be identified by the Land Manager in consultation with the Registered</p>	Baseline assessment prior to each environmental watering event at applicable locations. Subsequent monitoring events to be undertaken as per risk-based approach outlined in EDS ACH3.	<p>Land manager</p> <p>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).</p>

ID & Discipline	Performance objective	Phase	Indicator	Monitoring requirement and parameters	Locations	Frequency	Responsibility
					Aboriginal Parties/Traditional Owners and interested parties (as applicable).		
M ACH3 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.	<p>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.</p> <p>Reporting will include a review of the causes of any change and provide recommendations for management if justified.</p>	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).	<p>Land manager</p> <p>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).</p>
M ACH4 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	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	<p>Land manager</p> <p>The monitoring program must be implemented by a person appropriately qualified in archaeology or heritage management in collaboration with</p>

ID & Discipline	Performance objective	Phase	Indicator	Monitoring requirement and parameters	Locations	Frequency	Responsibility
				(if applicable) and report on changes in site condition directly related to the watering program. Reporting will include a review of the causes of any change and provide recommendations for management if justified.		applicable) and documented in EWMP (or similar mechanism).	the Registered Aboriginal Parties/Traditional Owners and Interested Parties (as applicable).
AI ACH1 Aboriginal Cultural Heritage	Verify compliance with the CHMP	C	Compliance check with EDS requirements	Monitoring and compliance in accordance with the CHMP No. 16900 and No. 16901 as approved under the Aboriginal Heritage Act 2006.	As required in accordance with CHMP No. CHMP No. 16900 and No. 16901.	As required in accordance with CHMP No. 16898 and No. 14330. Compliance audits to be undertaken as per the program detailed in the EMF.	Construction contractor
AI ACH2 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 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

ID & Discipline	Performance objective	Phase	Indicator	Monitoring requirement and parameters	Locations	Frequency	Responsibility
AI AQ1 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
AI AQ2 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
AI AG1 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

ID & Discipline	Performance objective	Phase	Indicator	Monitoring requirement and parameters	Locations	Frequency	Responsibility
AI GSC1 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 Increase in concentrations of contaminants of concern between baseline and post-construction conditions. Contaminants of concern would be based on the materials used or stored in a specific location, to be determined in the CEMP.	During construction: Inspections of spill controls and bundings, plant and equipment	Lay down areas and compounds Other areas where soil or materials are handled, chemicals stored or used	Weekly inspections during construction	Construction contractor
AI GSC2 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	International Erosion Control Association (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 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 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. During construction, record and audit: 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	All locations where waste generated (to be defined the CEMP)	Records kept during construction. 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
				waste. ii. soil tracking system including trucking and destination tracking and sampling results.			
AI GSC4 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 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 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: 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. 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. Compliance audits to be undertaken as per the program detailed in the EMF.	LMW/GW and Mallee CMA

ID & Discipline	Performance objective	Phase	Indicator	Monitoring requirement and parameters	Locations	Frequency	Responsibility
AI GSC5 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 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: 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. 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. Compliance audits to be undertaken as per the program detailed in the EMF.	LMW and Mallee CMA
AI HH1 Historic heritage	Minimise risk of harm to historical heritage values at Takasuka Levee	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	Takasuka Levee Bank (HO186/NT B6238)	Prior to construction commencing and during weekly environmental inspections while work is being undertaken in proximity to these sites.	Construction contractor
AI HH2 Historic heritage	Verify compliance with EDS HH1.	C	Compliance with <i>Heritage Act 2017</i> for discovery of archaeological sites	Check compliance with EDS HH1 and specifically requirements for implementation of an unexpected	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
				archaeological finds protocol during construction.			
AI HH3 Historic heritage	Verify compliance with EDS HH2.	O	Compliance with <i>Heritage Act 2017</i> 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 HH3 Historic heritage	Minimise risk of harm to historical heritage values at Takasuka Levee	C & O	Compliance with the Incorporated Document for the Project introduced through the Planning Scheme Amendment.	As required in EDS HH1 and HH2, comply with the Incorporated Document for the Project introduced through the Planning Scheme Amendment where a Heritage Overlay place is to be disturbed. Detailed recording and reporting requirements will be documented in the Incorporated Document. Inspect to check compliance with the Incorporated Document.	Takasuka Levee Bank (HO186/NT B6238)	Compliance audits to be undertaken as per the program detailed in the Environmental Management Framework.	Project partners to advise

ID & Discipline	Performance objective	Phase	Indicator	Monitoring requirement and parameters	Locations	Frequency	Responsibility
AI HH4 Historic heritage	Minimise risk of harm to historical heritage values at Takasuka Levee	C & O	Compliance with the Incorporated Document for the Project introduced through the Planning Scheme Amendment.	As required in EDS HH1 and HH2, comply with the Incorporated Document for the Project introduced through the Planning Scheme Amendment where a Heritage Overlay place is to be disturbed. Detailed recording and reporting requirements will be documented in the Incorporated Document. Inspect to check compliance with the Incorporated Document.	Takasuka Levee Bank (HO186/NT B6238)	Compliance audits to be undertaken as per the program detailed in the Environmental Management Framework.	Project partners to advise
AI NV1 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. Compliance audits to be undertaken as per the program detailed in the EMF.	Construction contractor
AI NV2	All pumping infrastructure to be serviced prior to installation and	O	Pumping infrastructure has not been serviced prior to installation and/or are not	A register is kept outlining the details of maintenance associated	Pumping infrastructure locations	Compliance audits to be undertaken as per	Mallee CMA or LMW

ID & Discipline	Performance objective	Phase	Indicator	Monitoring requirement and parameters	Locations	Frequency	Responsibility
Noise and vibration	maintained to manufacturer specifications		maintained to manufacturer specifications	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.		the program detailed in the EMF.	
AI SB1 Social and business	Minimise the impact of the project on businesses and the community	C & O	Complaints, feedback and enquiries	<p>Review of the implementation of EDS SB1 and SB3:</p> <p>The nature of complaints, feedback and enquiries received</p> <p>Time taken to close out complaints and enquiries</p> <p>Whether additional actions can be taken to address persistent complaint types</p> <p>Where there are opportunities identified to better communicate with or engage stakeholders.</p> <p>Communication processes to identify</p>	All	<p>Construction: as specified in the Community and Stakeholder Engagement Management Plan.</p> <p>Operation: in accordance with CMA and land managers processes and procedures and Victoria's Catchment Management Authorities Community Engagement and Partnership Framework and Toolkit</p>	<p>Construction: LMW</p> <p>Operation: Mallee CMA, Land managers (DEECA and Parks Victoria), LMW</p>

ID & Discipline	Performance objective	Phase	Indicator	Monitoring requirement and parameters	Locations	Frequency	Responsibility
				whether there are opportunities to improve.			
AI TE1 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 (if previously unidentified populations are found), 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.	<p>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:</p> <p>Verify that vegetation removal is consistent with the extent of vegetation approved for removal at each site.</p> <p>Verify that no-go zones have been delineated and maintained to protect significant ecological values as listed in the indicator column.</p>	Construction footprint	Weekly during environmental inspections	Construction contractor
AI TE2 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 Significance, weeds listed	Pre-construction inspections of construction sites and control of high threat weeds undertaken a	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
			under the CaLP 1994 and those listed as FFG Act threatening processes.	minimum four weeks prior to construction. Biosecurity check/inspections for plant material, seeds and soils containing organic matter in accordance with EDS E2d. \			
AI TE3 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. Sightings or damage observed.	Construction footprint, focused on laydown/office areas.	Food waste disposal locations checked during weekly during environmental inspections. Sightings observed.	Construction contractor
AI TT1 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 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	Prior to, during and at completion of construction as detailed in the Traffic Management Plan	Construction contractor

ID & Discipline	Performance objective	Phase	Indicator	Monitoring requirement and parameters	Locations	Frequency	Responsibility
					defined in the Traffic Management Plan).		
I GSC1 Geology soils and contamination	Confirm suitability of soil for use	C	<p>EPA Publication 1828.2 Fill material upper limits NEPM 2013 screening 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)</p> <p>EPA Publication 655.1 Table 3: Texture based action criteria for classification of acid sulfate soil.</p> <p>Specific parameters to be assessed include heavy metals, pesticides, herbicides, asbestos, hydrocarbons, acid sulfate soils and geotechnical properties.</p>	As required in EDS CM1b, detailed characterisation (sampling) of material that will be imported for use in construction 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.	Borrow sites and other material source sites (if any).	Characterisation: prior to commencing construction (once off if investigation sufficient)	Construction contractor
I GSC2 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	<p>As required by EDS CM2, undertake soil samples at selected locations as identified in the acid sulfate soil management plan (ASMP).</p> <p>The ASMP must outline processes and</p>	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
				procedures for identifying, reducing and minimising disturbance and oxidation of acid sulfate soils during construction.			

Glossary

Term	Definition
Adaptive management	<p>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.</p> <p>Adaptive management will be implemented during operation to ensure changes in management actions are most effective at achieving the identified benefits of the projects.</p>
Area of Investigation	<p>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.</p> <p>The Area of Investigation defines the area within which physical site information (existing conditions) has been collected to:</p> <ul style="list-style-type: none"> determine the potential direct adverse effects of construction activity for applicable specialist assessments; and ensure that sufficient data is collected to enable refinements to project footprints to be made to further avoid or reduce adverse effects.
Basin Plan	<p>Passed into law in November 2012 under the <i>Water Act 2007</i> (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 <i>Water Act 2007</i> to coordinate water resources within the Basin.</p>
Blackwater	<p>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'.</p>
Borrow site	<p>A shallow quarry located in proximity to the work sites that is used to source fill materials for the projects.</p>
Cofferdam	<p>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</p>

Term	Definition
	working environment so that the work can be carried out safely and minimise potential environmental impacts.
Commissioning	<p>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.</p> <p>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.</p> <p>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.</p>
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 will 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 or 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 <i>National Environment Protection (Assessment of Site Contamination Measure 1999)</i>).
Contaminated land (as taken from the Environment Protection Act 2017)	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
	<p>(a) is present in a concentration above the background level; and (b) creates a risk of harm to human health or the environment.</p> <p>2. Land is not contaminated—</p> <p>(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</p> <p>(b) if any prescribed circumstances apply to the land.</p>
Culvert	<p>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.</p> <p>Culverts allow for the transport of water whilst maintaining access across them.</p>
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)	<p>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.</p> <p>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.</p>
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 <i>Water Act 1989</i> 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 <i>Environment Protection Act 2017</i> 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 will be managed. It provides a framework for water planning, delivery, monitoring and consultation processes and will 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	<p>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.</p> <p>Hardstand can be temporary (for construction purposes that will be removed upon completion of works) or permanent.</p>
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	<p>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.</p> <p>For private land, the land manager is the private owner or person having responsibility for the care and management of that land.</p>
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 will 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	<p>Under the <i>Catchment and Land Protection Act 1994</i> (Part 8; Section 64), the Minister for Agriculture declares certain animals as pest animals in Victoria.</p> <p>Invasive pest animals threaten and impact Victorian farms, parks, forests, waterways, biodiversity, and catchment assets.</p>
Pest plant	<p>Under the <i>Catchment and Land Protection Act 1994</i> (Part 8; Section 60-63), the Minister for Agriculture declares certain plants as noxious weeds (pest plants) in Victoria.</p> <p>Invasive pest plants threaten and impact primary production and biodiversity.</p>
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	<p>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:</p> <p><i>Very large</i> – 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</p> <p><i>Large</i> – 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</p> <p><i>Small</i> – 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.</p> <p>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.</p>
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	<p>Hydraulic structures built to divert or control the release of flood waters.</p> <p>Spillways have been incorporated into some containment banks or integrated with regulator structures to control overflow during a natural or managed flood event.</p>
Technical Reference Group (TRG)	<p>A TRG, such as that appointed for the VMFRP, is normally established for a project specifically to advise on the preparation of an Environment Report and includes representatives from State and Commonwealth agencies, registered Aboriginal parties and local councils. The TRG advises the proponent on:</p> <ul style="list-style-type: none"> • relevant policy, strategies and statutory provisions

Term	Definition
	<ul style="list-style-type: none"> the design and adequacy of the specialist assessments for the Environment Report public information and stakeholder consultation programs responses to issues arising from the specialist assessments technical adequacy and completeness of draft Environment Report documents coordination of statutory processes.
Threshold	<p>For water – A water height, or flow that defines a critical limit for transition in operational conditions.</p> <p>For ecology – A time or ecological health condition that defines a critical limit for transition in ecological conditions.</p>
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	<p>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.</p> <p>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.</p> <p>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.</p>
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
CEWO	Commonwealth Environmental Water Office
CFA	Country Fire Authority
CHMP	Cultural Heritage Management Plan
CMA	Catchment Management Authority
DCCEEW	<p>Department of Climate Change, Energy, the Environment and Water.</p> <p>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.</p> <p>The environment and water portfolio, now resides within the Department of Climate Change, Energy, the Environment and Water (DCCEEW).</p>
DEECA	Victorian Department of Energy, Environment and Climate Action
DEECA BFS	Victorian Department of Energy, Environment and Climate Action Bushfire and Forest Service
DEECA RECAFP	Victorian Department of Energy, Environment and Climate Action Regions, Environment, Climate Action and First Peoples
DEECA WCG	Victorian Department of Energy, Environment and Climate Action Water and Catchments Group
DTP	Department of Transport and Planning
EDS	Environmental Delivery Standard
EMF	Environmental Management Framework
EMP	Environmental Management Plan
EMS	Environmental Management System
EPA	Environment Protection Authority (Victoria)
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth)
ER	Environment Report
EVC	Ecological Vegetation Class
EWMP	Environmental Water Management Plan
FFG Act	<i>Flora and Fauna Guarantee Act 1988</i> (Vic)
GL	Gigalitres

GMW	Goulburn-Murray Water
ha	Hectares
IEA	Independent Environmental Auditor
LEP	Local Environmental Plan
LMW	Lower Murray Water
Mallee CMA	Mallee Catchment Management Authority
MDBA	Murray-Darling Basin Authority
MER	Monitoring, Evaluating and Reporting
North Central CMA	North Central Catchment Management Authority
NSW	New South Wales
OEMP	Operation Environmental Management Plan
PPAMP	Pest Plant and Animal Monitoring and Management Plan
RAP	Registered Aboriginal Party
SDLAM	Sustainable Diversion Limit Adjustment Mechanism (Murray-Darling Basin Plan)
SCBEWC	Southern Connected Basin Environmental Watering Committee
SIAC	Standing Inquiry and Advisory Committee
TLM	The Living Murray
TRG	Technical Reference Group
TO	Traditional Owner
VEWH	Victorian Environmental Water Holder
VMFRP	Victorian Murray Floodplain Restoration Project

References

Murray, K, Skerratt, L, Marantelli, G, Berger, L, Hunter, D, Mahony, M and Hines, H (2011) Hygiene protocols for the control of diseases in Australian frogs. A report for the Australian Government Department of Sustainability, Environment, Water, Population and Communities.

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