



GMW Connections Project Environmental Management Plan

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Acronyms

Term/Acronym	Description
ASS	Acid sulphate soils
AV	Aboriginal Victoria
CaLP Act	Catchment and Land Protection Act 1994
CEMF	Construction Environmental Management Framework
CHA	Cultural Heritage Advisor
CHMP	Cultural Heritage Management Plan
CMA	Catchment Management Authority
DEDJTR	Department of Economic Development, Jobs, Transport and Resources
DELWP	Victorian Department of Environment, Land, Water and Planning
DoE	Commonwealth Department of the Environment and Energy
EIR	Environmental Infrastructure Register
EIS	Environmental Information Sheet
EMP	Environmental Management Plan
EMP	Environmental Management Plan
EMS	Environmental Management System
EPA	Victorian Environment Protection Authority
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999
ESA	Environmental Site Assessment
FFG Act	Flora and Fauna Guarantee Act 1988
GBCMA	Goulburn Broken Catchment Management Authority
GMID	Goulburn-Murray Irrigation District
GMW	Goulburn-Murray Water
HDPE	High Density Polyethylene
HSE	Health, Safety and Environment
MNES	Matters of National Environmental Significance
NVIM	Native Vegetation Information System
OFW	On-farm works
PAO	Public Acquisition Overlay
PIZ	Phylloxera Infected Zone
RAP	Registered Aboriginal Party
SDS	Safety Data Sheet
SECM	Site Environmental Control Map
SEPP	State Environment Protection Policy
TPZ	Tree Protection Zone Policy
VAHR	Victorian Aboriginal Heritage Register
VHR	Victorian Heritage Register

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1. Introduction & context

1.1 Purpose and scope

This Environmental Management Plan (EMP) has been prepared by the Goulburn-Murray Water (GMW) Connections Project. The purpose of the EMP is to set out the processes, procedures and guidelines to ensure that GMW Connections Project's construction activities are delivered in compliance to relevant state and Commonwealth legislation. The EMP details the planning and construction environmental management requirements to be applied to all capital works and on-farm works (OFW) undertaken by the GMW Connections Project and its Contractor(s). This EMP only applies to the GMW Connections Project activities, and not to GMW as a whole.

Contractors must undertake works in accordance with the environmental management requirements outlined in this document. For the purposes of this EMP the term 'Contractor' can be read to include the GMW Connections Project Decommissioning team.

1.2 Project location

The GMW Connections Project area is within the Goulburn Murray Irrigation District (GMID). The GMID is located in northern Victoria and extends from Nyah in the west to Yarrowonga in the east. The Connections Project area is located within the lower portions of the catchments of the Goulburn, Broken River, Broken Creek, Campaspe, Loddon and Avoca rivers, and abuts the River Murray.

The extent of the Connections Project works area (see Figure 1) covers the following irrigation areas:

- Central Goulburn Irrigation Area
- Rochester/Campaspe Irrigation Area
- Loddon Valley Irrigation Area
- Murray Valley Irrigation Area
- Torrumbarry Irrigation Area
- Shepparton Irrigation Area

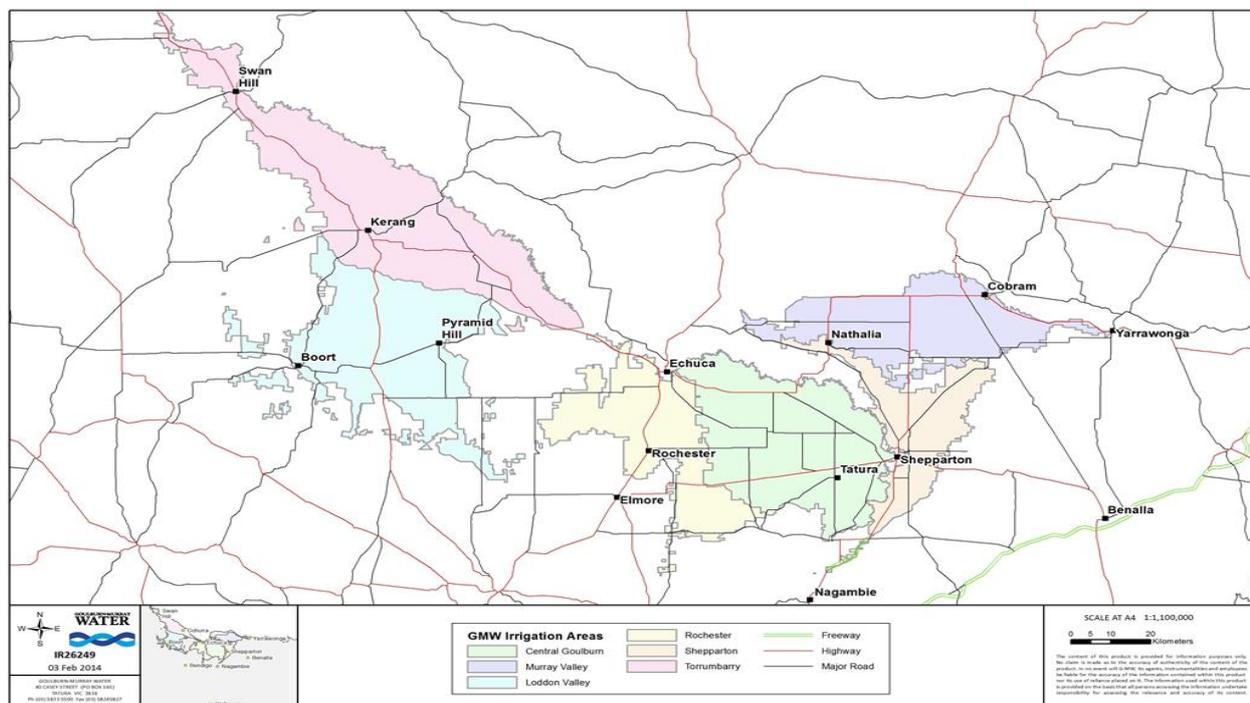


Figure 1 - The GMW Connections Project works area

1.3 Project description

GMW is responsible for implementing the GMW Connections Project which aims to upgrade irrigation delivery infrastructure in the GMID through automation, remediation and reconfiguration of the channel system. Its objective is to improve the efficiency of the irrigation delivery system and achieve the contracted volume of water savings to the Victorian and Commonwealth governments. Works associated with the GMW Connections Project are divided into two components, namely OFW and capital works.

Capital works refers to any construction or decommissioning works associated with GMW owned assets undertaken by the GMW Connections Project and its Contractors. Capital works will be mostly carried out within GMW channel easements and reserves. These easements and reserves are usually heavily disturbed sites with very little remnant vegetation. There may also be occasional construction works carried out on outfall structures adjacent to waterways and streams.

OFW refers to any works that are conducted on private property to reconnect that property to upgraded or new water supply arrangements to the farm gate. Small-scale civil works will be undertaken at many locations, predominantly on privately owned paddocks and will mostly occur within three to five kilometres of the backbone channels.

The actual length or scale of works in any individual circumstance is dictated by farm location, the outcomes of individual negotiations with landowners, the type of works required, and environmental or economic considerations. For example, a landholder may require a simple connection through their private property back to the original point of water supply for the farm. In some circumstances a farm will be re-connected through a third party's property.

Two distinct approaches to the delivery of OFW have been developed to assist in the timely delivery of the GMW Connections Project:

1. **GMW-managed OFW:**
The GMW Connections Project and its Contractor(s) are responsible for undertaking the works on private property. These private works are in association with water supply changes agreed to with the GMW Connections Project. In this arrangement, no financial incentive is offered to the landholder and construction activities will be managed in accordance with the GMW Connections Project EMP (this document).
2. **Privately-managed OFW:**
Private works are OFW undertaken by private landholders and/or their contractors associated with water supply changes as negotiated with the GMW Connections Project. Under this arrangement, landholders receive appropriate financial incentive to obtain all relevant environmental approvals and deliver compliant works on their property. The Connections Protocol is the mechanism by which the GMW Connections Project ensures landholder environmental compliance.

For the purpose of this EMP, 'OFW' refers to the first delivery approach listed above, namely works on private property undertaken by the GMW Connections Project and its Contractor(s).

1.4 Primary construction activities and methodologies

1.4.1 Meters

New automated meters are typically installed at each existing Dethridge wheel location, open outlets or upgraded stock and domestic outlets. In some circumstances one meter may replace more than one outlet and may be installed in a new location (i.e. consolidation / re-design of farm activities allowing replacement of two or three outlets with one automated meter). Automated meters are able to be operated locally or remotely read and controlled.

The works typically involve:

- Installation of a coffer dam within the channel and dewatering;
- Removal of existing Dethridge wheel;
- Minor civil works to install an inlet pipe through the channel bank;
- Installation of meter and associated supports and handrail/walkway; and
- Farm channel transition works and erosion control measures.

The works can be undertaken all year round including the non-irrigation season. Note that some sites will include the installation of a mast and solar panels; which on occasion will be positioned remotely to overcome shading issues.

The typical construction footprint for these works is from the top of the channel bank to 10m past the easement boundary; 15m either side of the meter as shown in Figure 2. Access to the meter is along the nominated access track and channel bank or via private paddock / property with the permission of the landowner. There is some flexibility in the siting of the meter to minimise environmental impacts; subject to landowner approval.

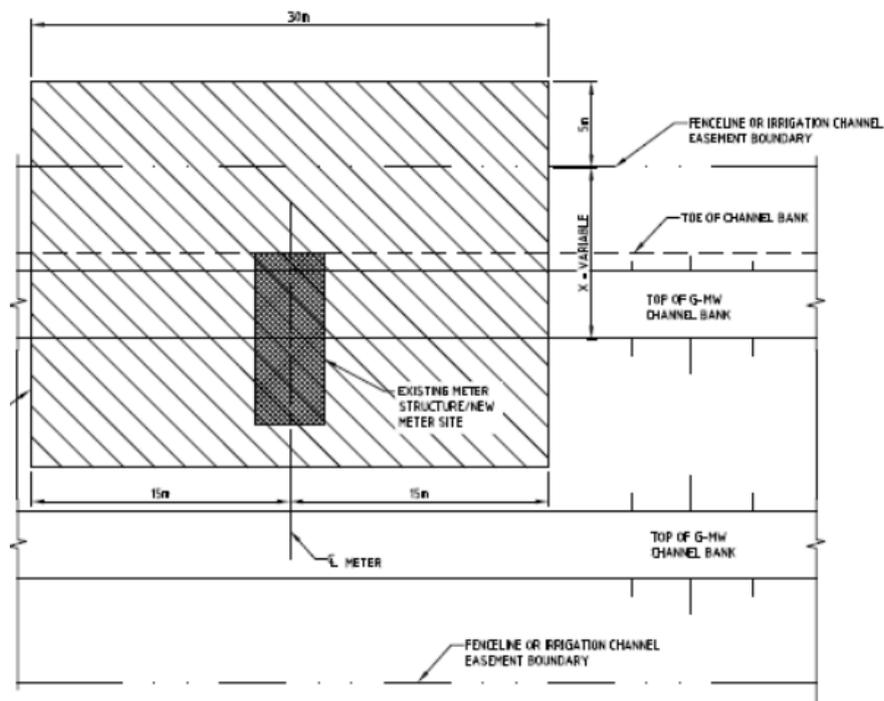


Figure 2 - Typical meter site footprint

1.4.2 Regulators

New automated gates will replace existing manual gates in predominantly existing regulator structures within the irrigation channel. The installation of new gates typically involves:

- De-watering of the channel;
- Construction of a coffer dam;
- Removal of silt from within the channel;
- Minor civil works (alteration of sills, extension of wing walls, erosion control measures);
- Modifications to the channel bank;
- Installation of handrail/walkway; and
- Refurbishment or replacement of the regulator structure.

In a small number of instances, new regulators or flow measurement devices will be installed in new locations.

Stockpiling of soil and gravel will occur within the construction footprint or access track. Where reasonable, access and laydown areas will be kept to one side of the channel bank to reduce environmental impact. The construction footprint along the channel bank will typically not be cleared of vegetation; however overhanging branches may be lopped.

The typical construction footprint for these works extends up to 20m either side of the regulator structure within the irrigation channel (including bank disturbance), but varies according to the particulars of the site. Access to the regulator is along the nominated access track and channel bank where possible. The location of the regulator is fixed, however construction practices and footprint can be modified to minimise environmental impacts. The works will typically be conducted during the non-irrigation season.

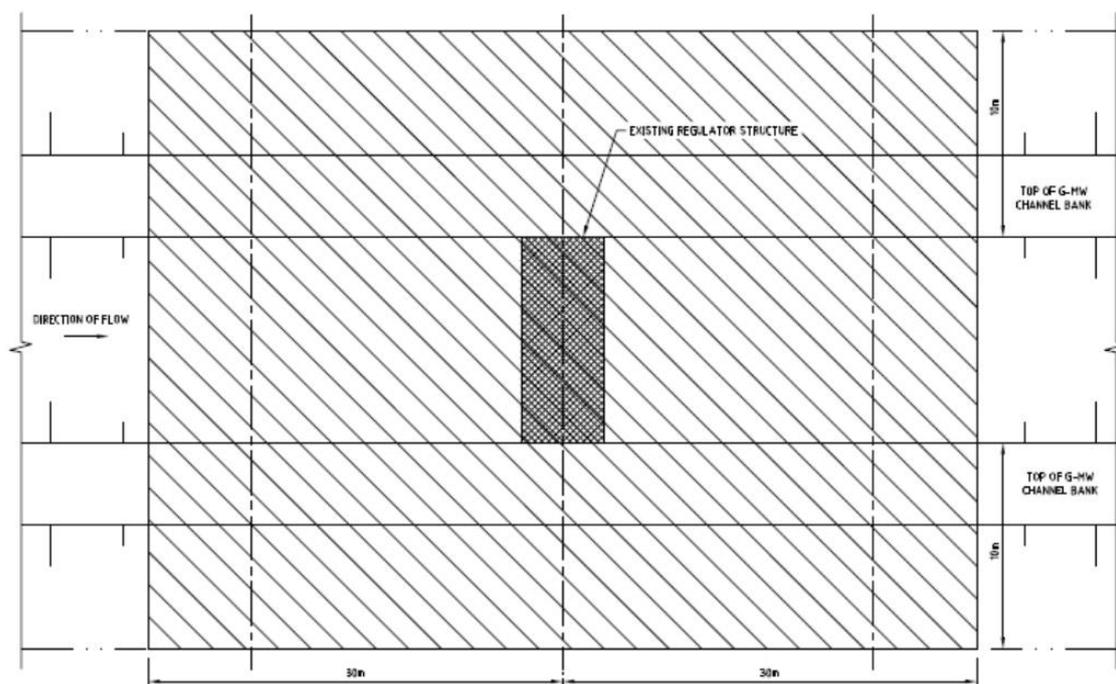


Figure 3 - Typical regulator site footprint

1.4.3 Channel remediation / enhancement

Nominated sections of the irrigation channels are to be lined or remodelled in areas of light soils to minimise water loss through seepage and leakage. Channels will be lined with either plastic (High Density Polyethylene - HDPE), clay or other suitable material i.e. geo-fabric.

Channel lining may involve the removal of top soil, trees and root systems along the relevant length of channel. The construction footprint typically extends up to 3m either side of the channel toe to facilitate access of required plant and equipment.

Sections of channel may be enhanced to improve the capacity or service of the channel for customers. There is no 'typical' construction footprint for channel enhancement as it will depend on how wide the enhanced channel will be.

Construction activities typically include:

- Survey and acquisition of additional land (if required);
- De-watering of the channel;
- De-silting and remodelling of the channel profile or widening of channel;
- Installation of HDPE lining (or clay alternative);
- Anchoring of HDPE lining in backfilled trenches;
- Construction of a new access track along the length of the lined channel; and
- Installation of fencing along channel reserve boundary and along road reserve.

Outside bank remodelling is another method used for Channel Remediation. The outside bank is rebuilt to minimise leakage. Where clay is imported for channel remodelling or lining, it is primarily sourced from borrow pits on neighbouring landowner properties.

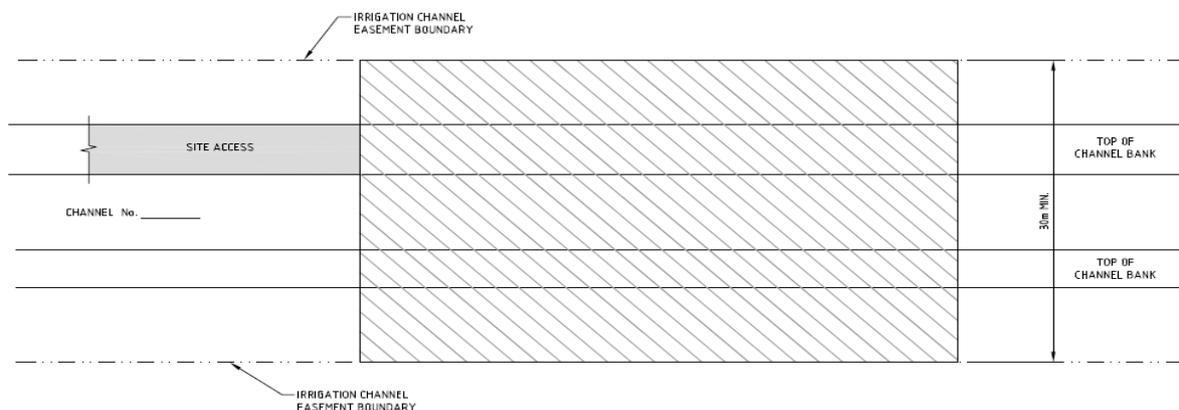


Figure 4 - Typical channel lining site footprint

1.4.4 Decommissioning activities

The Connections Project and its contractors are largely responsible for decommissioning works. Typical activities include:

- De-watering and or de-silting;
- Decommissioning of metering structures;
- Decommissioning of channels; and

- Decommissioning of ancillary structures such as regulators, occupational crossings and road culverts.

Decommissioning of GMW channels may involve installation of an earthen bank to cease water flow, removal of metering and regulator structures on the section of channel, pushing in the banks of the channel and finally levelling the surface. Decommissioning of assets may involve the removal of or impact to native vegetation within the nominated alignment.

Existing farm channels may be decommissioned where landowners have private channels that are no longer required, or have taken control of GMW assets.

The construction footprint varies with the size of the channel, but will generally be up to 10m past the toe of the bank.

1.4.5 New channels / channel extensions

New GMW channels will be built in instances where the old channel is irreparably damaged or where more efficient channel alignments are feasible. The construction footprint will be dependent on the width of the proposed channel, and will generally be up to 10m past the toe of the bank.

New farm channels are generally much smaller (in width) than the backbone channels since they only supply one property.

Construction of new channels may involve the removal of trees, roots and structures within the nominated alignment. Other activities may include:

- Selecting and acquiring preferred alignment (if needed);
- Installation of flooding subways;
- Earthworks to form the channel and to form pads and banks;
- Installation of HDPE lining (or clay alternative);
- Fencing of channel; and
- Construction of a new access track either along the channel bank or beside the channel bank.

New channels will require cross drainage to ensure they do not alter the path or rate of water passing across the landscape. Bay outlets for irrigation will be installed as required.

1.4.6 New pipelines

New irrigation pipelines (GMW owned) are installed to provide water supply to the farm gate. New pipelines can also be on-farm for reticulated irrigation supply within private property.

Construction activities typically include:

- Pipe welding;
- Trench excavation (undertaken by a trencher or excavator); and
- Pipe installation and backfilling.

Farm pipelines are generally “pipe and riser” systems which replace existing on-farm open channels with a piped network and where riser outlets replace existing bay outlets.

The construction footprint depends on the pipe size and length of connection and may involve road crossings and/or easements across private properties. Under-boring can be utilised where appropriate to avoid impacts to native vegetation.

The decision of whether to construct pipelines or channels depends on a range of factors including flow efficiency, cost, and purpose.

1.4.7 Culverts

Culverts are often used to pass channel or drainage water under roads, railways and on occasion, on-farm laneways. Culvert replacement, new installation or decommissioning will be undertaken where required. They may also be required for farm channels or drains. Culvert works may include:

- Saw-cut sealed road pavement (if required);
- Remove existing culvert and end walls;
- Cleanout trench in readiness for placement of bedding material;
- Liquid filling of culvert with a slurry mix;
- Lay new culvert and place on the pre-cast end walls or install by direct horizontal bore methods;
- Backfill trench;
- Reinststate sealed road surface; and
- Reinststate roadside signs and guide posts.

The construction footprint will typically be 10m either side of the culvert, but will be flexible depending on the size of the culvert and the need to avoid vegetation within the footprint.

1.4.8 Channel & drain siphons

Channel and drain siphons would rarely be required and only where new channels/drains have to pass under existing channels/drains. These works would typically involve open excavations, however under-boring with pipes is an alternative option where there is a need to avoid native vegetation or cultural heritage, or to avoid interruptions to the operation of existing assets.

1.4.9 Intake structures

Minor civil works will be required to install a pump pit / station if gravity feed is not an option. A pump pit / station generally consists of a suction intake, pump, motor, discharge manifold, connection to the discharge pipe work and ancillary electrical and control infrastructure. The pump pit /station, manifold and ancillaries may be secured within a pump shed. The construction footprint will vary depending on pump size.

1.4.10 New farm drains and dams

New farm drains and dams may be constructed where required. Drains are similar to channels. Drains and dam works typically require earthworks (grader, scraper, excavator) to form a drain or dam.

1.4.11 Stock & domestic connection

Impacts will be similar to that of a new farm channel or pipeline, though smaller scale. Pipes are more commonly employed for this type of connection.

1.4.12 Ancillary activities

An outline of ancillary activities is provided below.

Site set up

Site establishment and minor works i.e. flagging/security fencing, signage, minor earthworks to set up site hut and stabilise access if required. Setup activities will vary depending on the scope of works and will usually only be required for larger projects with multiple contractors on site. Alternatively one site hut may serve various small projects occurring in the area.

Fencing

Removal of redundant fencing may be required and any cut fences will be repaired.

Access tracks / farm laneway

In most instances Contractors will access a site via existing access tracks/laneways or access routes across paddocks as agreed with the landowner. Some existing tracks may require minor upgrading (gravelling/levelling). In some circumstances a new access track/laneway will need to be constructed and may require import of material to establish appropriate and safe access.

Irrigation layout (laser grading)

This involves general earthworks to move soil from one section of the property to others as required for works. For instance, such work may involve excavation soils from existing channels or drains to create laneways and access, or to use as fill material in asset decommissioning or other relevant activities.

Borrow pits

Clay for the project may be obtained from borrow pits located on neighbouring farms. If not available locally, clay will be appropriately sourced and transported as required.

Laydown areas

If insufficient area is available within the approved construction footprint for storage of construction materials, the Contractor may seek landowner approval for the laydown area to be situated on private land. Laydown construction may involve the stripping of topsoil and laying of gravel. At the completion of the project, the site is re-instated to the previous condition as agreed with landowner.

Silt disposal

After a site has been dewatered, there may be silt to dispose of within the construction footprint, usually in a trench. The Contractor may seek landowner approval to dispose of excess silt on already cleared private paddock, where it cannot be disposed of within the construction footprint.

Dewatering / temporary bypass

Where works are proposed to occur within the irrigation channel, coffer dams will be constructed upstream and downstream of the activity area and dewatered to enable works.

In addition to coffer dams, a temporary bypass system (pump and pipe) may be installed to enable some construction activities to be undertaken during the irrigation season. A bypass system generally involves a pump station and water delivery infrastructure (i.e. lay-flat hose) within an existing channel. Otherwise a temporary cut is made into the ground to position the lay-flat hose.

Communication towers

New communication (node) towers will be added to the existing network of node towers to enable effective operation of the modernised and automated system. The towers communicate with the regulators and meters to allow real-time automated control of flow. Each tower is either 25m or 40m high. The construction footprint of towers is approximately 5m by 10m, but may vary slightly from site to site.

Power and electrical connections

Some on-farm works may require new power or electrical connections to enable operation of pumps (where gravity feed is not available). Works can include minor excavation works to install electrical cables, conduits and ancillary items.

1.5 Environmental context and values

1.5.1 Environmental context

The landscape within the GMID has been highly modified by agricultural development, including the installation of irrigation infrastructure. Land use in the area is predominantly irrigated agriculture. Major enterprise types include dairy (irrigated pasture production), intensive horticulture (stone and pome fruits and citrus) and viticulture. The area is predominantly private landholdings, along with some areas of public land.

Due to a long history of irrigation, much of the landscape has been previously degraded by clearing, grazing pressures, weed invasions, salinity, water logging and increasing urbanisation. These factors have contributed to an overall decline in the availability of potential habitat for native flora and fauna, and a reduction in the abundance and diversity of native flora and fauna across the region. However, some high quality remnant habitats remain within the GMID, including many wetlands.

1.5.2 Environmental values

Known potential environmental values associated with the project area are provided in Table 1.

Table 1 - Key environmental values

Environmental value	Detail
Native vegetation	Native vegetation, as defined in the Clearing of Native Vegetation – Biodiversity Assessment Guidelines (2013), may occur within construction sites. The majority of the GMID is located with the Murray Fans and Victorian Riverina bioregions.
Listed flora and fauna species	Twelve species listed under the <i>Flora and Fauna Guarantee Act 1988 (FFG Act)</i> and/or the <i>Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)</i> were identified in preliminary assessments by ecologists as low or moderate risk. The two potentially moderate risks are Crimson-spotted Rainbowfish and Growling grass frog; and low risk include Australasian Painted Snipe, Baillon's Crake, Blue-billed Duck, Brolga, Carpet python, Eastern Great Egret, Freckled Duck, Mountain Galaxias, Murray cod and White-bellied Sea Eagle. The risk to other listed flora and fauna species is considered very low.
Native fauna	Wildlife, as defined in the <i>Wildlife Act 1975</i> , may occur within construction sites.
Cultural heritage	Aboriginal places/artefacts may occur with construction sites. Some construction sites may occur within an area of cultural heritage sensitivity.
Waterbodies	Construction sites will be located in close proximity to irrigation channels. Construction sites may occur in close proximity to, and sometimes within, waterways and wetlands.
Amenity	Construction sites may be located in the vicinity of residential properties sensitive to impact from air and noise emissions and dust. Significant landscape trees may be located within construction sites.

Environmental value	Detail
Soils	<p>Acid sulfate soil (ASS) is the common name for soils that contain metal sulfides. In an undisturbed and waterlogged state, these soils may pose no or low risk. However, when disturbed or exposed to oxygen, ASS undergo a chemical reaction known as oxidation. Oxidation produces sulfuric acid which has led to these soils being called acid sulfate soils.</p> <p>The probability of ASS occurring in the GMID is mostly low to extremely low with isolated areas of high according to the probability of ASS occurrence map accessed via the Department of the Environment and Energy (DoE) webpage.</p> <p>Soils within the GMID are generally stable and not prone to erosion due to the flat nature of the landscape.</p>

1.6 Project environmental management framework

Implementation of this EMP is the mechanism to deliver the commitments made in the GMW Connections Project EMS and Construction Environmental Management Framework (CEMF). The EMS, CEMF and EMP have been developed to meet the Ministerial conditions prescribed for the GMW Connections Project under the *Environment Effects Act 1978*. The relationship to these documents is highlighted in Figure 5.

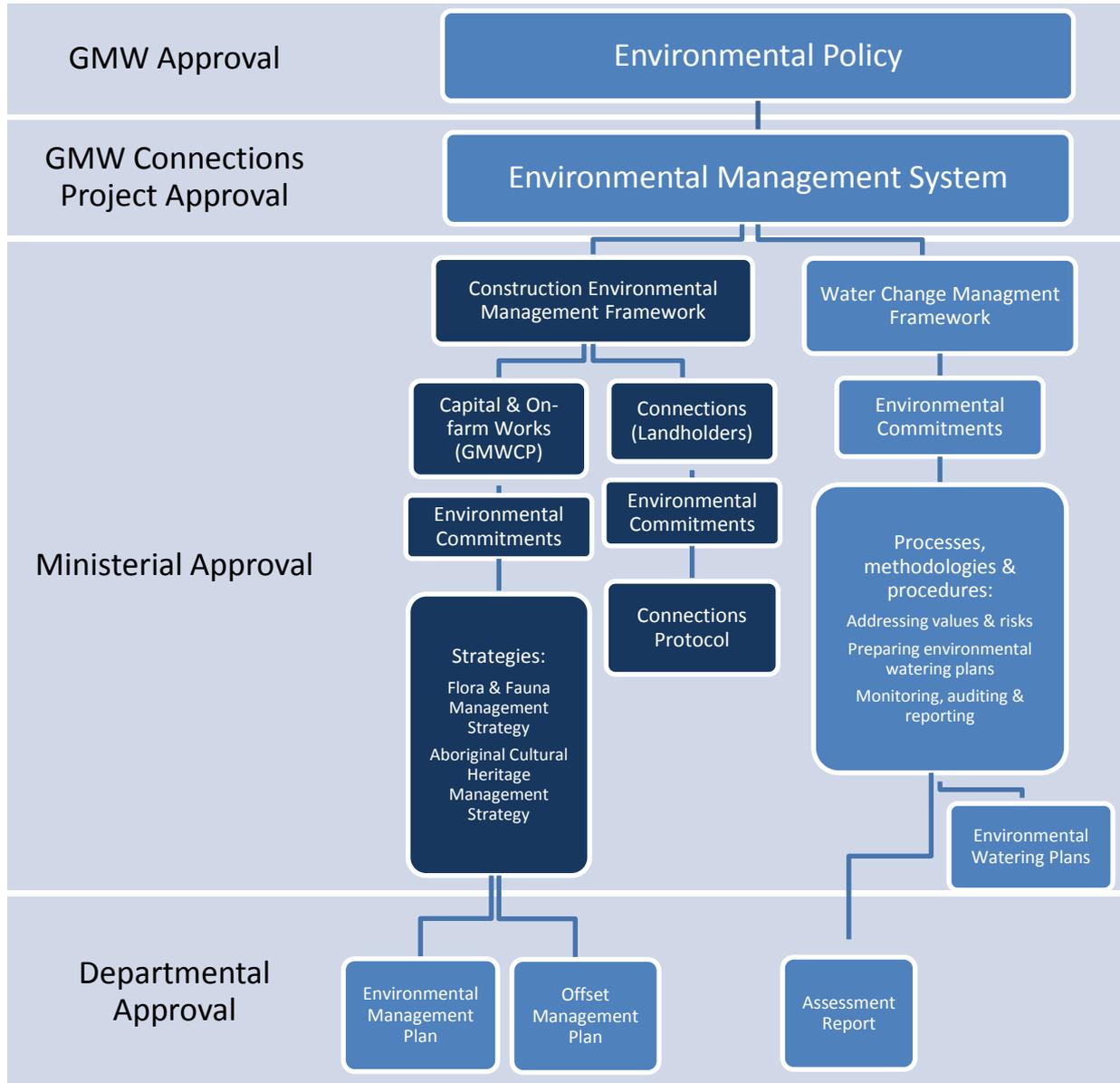


Figure 5 - Environmental document structure for GMW Connections Project

1.7 EMP approval

This EMP is a controlled document and will be approved and revised in accordance with the requirements outlined in Table 2.

Table 2 - EMP approvals

Timing	Approval	
	GMW Connections Project	Victorian Government
Initial	Project Director	Secretary to the Department of Environment, Land, Water and Planning (DELWP)
Ongoing	Project Manager Environmental, in consultation with DELWP	Secretary DELWP

2. Risk management & legal

2.1 Risk assessment

At project commencement, the GMW Connections Project – Project Manager Environmental assembled a review team including representatives from DELWP, the Goulburn Broken Catchment Management Authority (GBCMA) (acting on behalf of GBCMA and North Central CMA), and groups from within GMW, to undertake an environmental risk assessment. The results of the environmental risk assessment are maintained in the GMW Connections Project EMS Environmental Planning Register. The GMW Connections Project maintains the currency of the information in this register by undertaking periodic reviews, as required by its EMS.

2.1.1 Significant flora and fauna risk assessment (GMID)

In 2009 an ecological consultant (Sinclair Knight Merz – SKM; now Jacobs) was engaged to assess the potential impact and risks to ecologically significant flora and fauna resulting from the GMW Connections Project's construction activities, based on a desktop assessment. The listed flora and fauna species in Table 1 provides a summary of the significant flora and fauna which has been assessed as having low to moderate risk of being encountered within the GMID and which could potentially be impacted by construction activities. The 2009 SKM assessment did not identify any significant flora or fauna species with high or very high risk; all other identified species are very low risk. Further information is detailed in the Flora and Fauna Management Strategy contained in the CEMF. The full significant flora and fauna risk assessment is contained in a supplementary document to the CEMF.

2.1.2 Site specific risk assessment

The EMP is concerned with managing site specific risks associated with construction activities. These are identified by the Contractor through the environmental and planning due diligence process as described in [Section 3.3](#). Site management measures and protocols are detailed in [Section 3.4](#).

2.2 Project legislative requirements and approvals

A summary of key legislative requirements and approvals relevant to the EMP is outlined in Table 3 below. Some of the higher level approvals have already been obtained by the GMW Connections Project however some are to be applied for in the works planning phase.

Facilitated by a Planning Scheme Amendment, the 'GMW Connections Project Incorporated Document 2015' exempts works undertaken in accordance with this EMP from the need to apply for planning permits at the following councils, subject to conditions outlined in Table 3:

- Campaspe Shire
- City of Greater Shepparton
- Gannawarra Shire
- Loddon Shire Council
- Moira Shire
- Rural City of Swan Hill
- City of Greater Bendigo

The Incorporated Document (**Appendix A**) does not apply to Strathbogie Shire. Works within Strathbogie Shire are expected to be very limited or none at all, however if works are planned in these areas, planning permits must be sought.

The Contractor is responsible for complying with all relevant legislative requirements and project environmental approvals for construction activities undertaken under this EMP. The implementation requirements to achieve statutory compliance (including Table 3 requirements) are set out in [Section 3](#).

Table 3 - Key EMP approvals and legislative requirements

Requirement	Relevance to EMP Works	Mechanism	Approval Authority	Approval Status
Acts and Regulations – Victoria				
<i>Aboriginal Heritage Act 2006</i> <i>Aboriginal Heritage Regulations 2007</i>	A Cultural Heritage Management Plan is required for significant ground disturbance in areas of cultural heritage significance. A due diligence assessment by a CHA may be undertaken to confirm whether a mandatory CHMP or CHP is required	Due Diligence / Cultural Heritage Management Plan	Aboriginal Victoria (AV) and/or Registered Aboriginal Party (RAP)	Ongoing - site by site
<i>Catchment and Land Protection Act 1994</i>	It is an offence to remove machinery, implements or other equipment from land to a road or from a road to land without first taking reasonable precautions to ensure that the equipment is free from the seeds of any noxious weeds or parts of a noxious weed capable of growing	Desktop assessment and site management		Ongoing- site by site
<i>Fisheries Act 1995</i>	A permit is required to capture and relocate particular aquatic species – see permit for authorised species	Fish Liberation Permit	DEDJTR	The current permit is located in Appendix B
<i>Flora and Fauna Guarantee Act 1988</i>	A permit is required to disturb or move protected flora on Crown Land A permit is required to capture and relocate protected fish species	Permit to Take Protected Flora Permit to Take Protected Fish	DELWP	The current permits are located in Appendix B
<i>Environment Protection Act 1970</i>	A waste transport certificate is required to transport prescribed industrial waste. Management controls need to be in place to meet EPA guidelines for waste storage and transport, major construction sites, protection of water, groundwater and air, storage of chemicals and noise and amenity.	Management measures detailed in the EMP, Fields Handbook and SECM.	EPA (waste transport certificates)	Ongoing- site by site

Requirement	Relevance to EMP Works	Mechanism	Approval Authority	Approval Status
<i>Road Management Act 2004</i>	A permit is required for any works or activities on state and/or local roads or road reserves. <i>Note: 'works' includes ancillary activities such as site access, stockpiling and native vegetation removal – a description of these activities to be included in the application i.e. attach the Site Environmental Control Map.</i>	Works permit and / or written approval	State – VicRoads; apply via GMW Connections Project Construction team Local – apply direct to relevant council	Ongoing-site by site Refer GMW-VicRoads Agreement Annexure A (Appendix C)
<i>Water Act 1989</i>	A declaration from GMW stating that a channel is no longer required for water supply or drainage must be obtained prior to decommissioning a channel A Works On A Waterway Permit issued by the relevant CMA is required to construct works on a waterway	Connections Agreement Works On A Waterway permit	GMW CMA	Ongoing-site by site
<i>Water Act 1989</i>	Where tree removal (both native and exotic) will occur on private land (i.e. no GMW easement), compensation may be payable in certain circumstances.	Contact GMW Connections Project Environment team prior to discussions with the landowner and removal of the tree to establish the statutory obligations (if any)	GMW Connections Project Environment team	Ongoing-site by site
<i>Wildlife Act 1975</i>	A permit is required to capture and relocate wildlife	Management Authorisation	DELWP	The current permit is located in Appendix B
Acts – New South Wales				
<i>Fisheries Management Act 1994</i>	A permit is required for translocate native fish from Victorian Irrigation Channels into the Murray River	Translocation Permit	NSW Department of Primary Industries	The current permit is located in Appendix B

Requirement	Relevance to EMP Works	Mechanism	Approval Authority	Approval Status
Policies				
Industrial Waste Management Policy (Waste Acid Sulphate Soils)	Acid sulfate soils (ASS) need to be identified, managed and disposed in accordance with EPA Publication 655.1 and the Industrial Waste Management Policy (Waste Acid Sulfate Soils)	Desktop assessment and site management		Ongoing-site by site
State Environment Protection Policy (Waters of Victoria)	Fish kills (multiple fish, native or introduced) must be reported to the EPA and managed in accordance with EPA Publication 1068 Waterway Incident (Fish Death) Response Guideline	Reporting of fish death record	EPA	Ongoing-site by site
Victoria's native vegetation clearing and offsetting policy	Vegetation removal is to be in accordance with the requirements set out in the State's native vegetation clearing and offset policy	Desktop and field assessment Site Environmental Control Maps DELWP approval Annual Offset Management Plan (OMP)	DELWP – as required Secretary DELWP for OMP approval	Ongoing-site by site
Planning Scheme Amendment (Planning & Environment Act 1987) (Appendix A)				
Incorporated Document Condition 6.2 CMA Consent	Written consent from the relevant CMA must be obtained prior to the commencement of any new use or buildings and works (including decommissioning) within the following zones and overlays: <ul style="list-style-type: none"> • Urban Floodway Zone • Floodway Overlay • Land Subject to Inundation Overlay 	Desktop assessment Site Environmental Control Maps Written approval	CMA	Ongoing-site by site CMAs have exemptions to this approval requirement. See Appendix D for works exempt from CMA from flood overlay consent

Requirement	Relevance to EMP Works	Mechanism	Approval Authority	Approval Status
Incorporated Document Condition 6.3 Heritage	Where any building or place within the GMW Connections Project Area is identified in a schedule to the Heritage Overlay in the Scheme, the prior written consent of the relevant responsible authority is required prior for any action which would have required a planning permit. Any request for the written consent of the responsible authority under this provision must be accompanied by a report by a suitably qualified heritage adviser	Desktop assessment Site Environmental Control Maps Written approval	Relevant Council	Ongoing-site by site
Incorporated Document Condition 6.4 Compatibility with public purpose (Appendix A)	The written consent of the public land manager or the acquiring authority must be obtained prior to the commencement of any new use or buildings and works, or any removal, destruction or lopping of vegetation within a public land zone or a Public Acquisition Overlay which, but for this control, would have required a planning permit	Desktop assessment Site Environmental Control Maps Written approval	Relevant Public Land Manager	Ongoing-site by site
Other Approvals				
<i>GMW Licence to Construct and Use Private Works</i>	GMW approval be sought for private works on land or assets owned or managed by GMW	GMW Private Works Licence	GMW (Customer Operations)	Ongoing-site by site
<i>Environment Effects Act 1978</i>	In 2009 and 2011 the Minister for Planning decided that NVIRP, now the 'GMW Connections Project', would not be required to prepare and Environment Effects Statement subject to conditions. One condition includes the requirement to ensure compliance by the project and its contractors (to the approved environmental management framework)	This document (EMP)	State Minister for Planning	Minister for Planning's decisions for NVIRP 2009 and for Adjunct Works 2011
<i>Environment Protection and Biodiversity Conservation (EPBC) Act 1999</i>	In 2010 the project obtained EPBC Act approval for the impact of operating the fully modernised GMID. Connections Constructions have been assessed as not requiring formal EPBC Act approval subject to implementing an appropriate procedure to avoid potentially significant impacts to Matters of National Environmental Significance (MNES)	This document (EMP; Appendix C – MNES Procedure)	Cwlth. Minister for Environment	Ongoing due diligence by GMW Connections Project for its EMP construction activities

3. Implementation requirements

This section sets out the due diligence planning and construction management requirements (and expectations) to achieve compliance consistent with the GMW Connections Project’s EMS, CEMF and overarching project approvals. It describes the general requirements followed by detailed specifications for due diligence and field components.

3.1 Roles and responsibilities

The roles and responsibilities associated with implementation of this EMP are summarised in Table 4.

Table 4 - EMP roles and responsibilities

Role	Key responsibilities associated with EMP implementation
GMW Connections Project (Environment team)	<ul style="list-style-type: none"> • Develop, implement and maintain a project-specific EMS including maintenance of appropriately scoped legal, risk and training registers; • Obtain and ensure compliance to relevant project-wide approvals; • Prepare and implement a CEMF; • Prepare an EMP for the scope of GMW Connections Project Construction activities (consistent with EMS, CEMF and approvals); • Liaise with and participate in meetings with regulators, other agencies and Contractors as required; • Liaise and coordinate internal and independent audit activities; • Monitor environmental compliance performance for continual improvement; • Report on EMP performance and audit outcomes to regulators as required; • Provide technical advice to internal / external parties on relevant statutory requirements and the project’s approvals context; and • Commission technical studies or specific assessments as required.
Contractor	<ul style="list-style-type: none"> • Assign a suitably qualified Environmental Manager/Coordinator (or equivalent) and Support Officers as required to oversee implementation of this EMP; • Obtain all relevant site-specific approvals and permits from statutory authorities (other than project statutory approvals and permits obtained by GMW Connections Project i.e. VicRoads consent – refer Table 3 – <i>Road Management Act 2004</i>); • Implement EMP requirements (including specified site inspection targets (refer Section 5.1); • Ensure that all Project Managers, site workers and sub-contractors are aware of EMP requirements; • Participate in internal & independent environmental audit activities; • Manage daily operational compliance with EMP; • Liaise with and participate in meetings with GMW and/or agency representatives as required; • Regularly report on environmental performance to GMW; and • Maintain appropriate records/registers (refer Appendix E).

3.2 General management requirements

Personnel delivering works under this EMP are to be suitably qualified, experienced or appropriately trained to undertake their work in an environmentally responsible manner.

3.2.1 Training

Training may include formal courses or on-field mentoring. The Contractor is responsible for assessing training requirements, arranging for personnel to undertake relevant training and to maintain appropriate records of training.

Training may include:

- Native fish and freshwater crayfish handling (mandatory under permit to have suitably trained staff to undertake any relocation activities);
- Native vegetation identification;
- Weed management training; and
- Cultural heritage awareness training.

3.2.2 Inductions

Contractor EMP induction

Personnel involved in undertaking EMP works will be required to complete a Contractor EMP Induction which will incorporate key aspects of the EMP. The induction is to include an appropriate assessment to demonstrate an understanding of key issues, requirements and responsibilities. The Contractor is responsible for the development, delivery and record management of the Contractor EMP Induction.

As part of their induction each person should receive a copy of the GMW Connections Project EMP supplementary Field Handbook, or an alternative approved by the Connections Project's Environment Manager, in either hardcopy or electronically. Contractor employees must have ready access to the Field Handbook, or approved alternative, at all times. Copies of the Field handbook can be obtained by contacting the GMW Connections Project Environment team.

The Contractor EMP Induction will be reviewed by the Contractor on a regular basis or in the event of a substantial change in environmental procedures, to ensure it reflects current working practice.

The Contractor must submit the induction to the GMW Connections Project Environment team for review as requested.

Site-specific environmental induction

Prior to commencement of site works, the Contractor will deliver a Site-specific Environmental Induction covering any relevant site-specific environmental, planning or cultural heritage issues/requirements contained in [Section 3.4](#). The approved Site Environmental Control Map (SECM) will be used as the basis for this induction. The Environmental Induction forms part of each Site Induction and each site must maintain an appropriate induction log.

Where a CHMP has been approved for a site, the cultural heritage induction must be done in accordance to the specific induction requirements set out in the CHMP. Otherwise general Cultural Heritage awareness and references are provided in the Contractor EMP induction and field handbook.

Visitor induction

A Visitor Induction covering any relevant environmental aspects will be delivered to all visitors and delivery staff to site. Visitors are to be accompanied at all times within the site by an individual who has completed both the Contractor EMP and Site-specific inductions.

3.2.3 Emergency response

The Contractor or sub-contractor is required to develop and implement an appropriate environmental emergency response plan. The GMW Connections Project Environment team is to be notified as soon as practicable of any emergency event (refer Table 5). Contact details for emergencies should be considered in the emergency response plan and key numbers are included in the EMP Field Handbook:

- GMW 24hr emergency contact number is 1800 064 184 in the event of operational incidents impacting GMW assets (i.e. chemical or oil spills in delivery, drainage or storage network).
- General emergency contact is 000 (or 112 if on mobile).
- Poisons Information Centre (National) 13 11 26.
- Environment Protection Agency (EPA) 1300 372 842 for uncontrolled pollution emergencies (potential public health impacts).

3.2.4 Incident response

Examples of incidents include (but are not limited to):

- Unauthorised impact/loss of native vegetation;
- Spills (land / water contamination);
- Damage to cultural heritage;
- Uncontrolled sediment discharge into waterways;
- Generation of excessive dust or noise (public health consequences);
- Spread of weeds / disease beyond declared zones;
- Breach of any established quarantine measures;
- Fauna mortality; and
- Unauthorised works on public land (VicRoads, council, public land manager).

The Contractor or subcontractor must have an appropriate incident response procedure in place. Incidents will be reported to GMW Connections Project in accordance with Table 5 or the GMW emergency hotline 1800 064 184 for water quality related incidents. See **Appendix F** for template.

3.2.5 Site commissioning & handover

As part of the site handover process to GMW or the landholder, the Contractor will confirm for each completed site that the SECM, EIS (if prepared) and any other relevant approval conditions were met. Results of desktop analysis and any field surveys pertaining to the site will be provided to GMW upon request.

3.3 Due diligence planning requirements

Environmental and cultural heritage due diligence planning will be undertaken for each site prior to any works commencing and consists of following key steps:

- Desktop assessment and site verification;
- Field surveys (if required).;
- Site Environmental Control Maps (SECM) and Environmental Information Sheet (EIS); and
- Approval/consent checklist.

The general due diligence process is presented in a flow chart below.

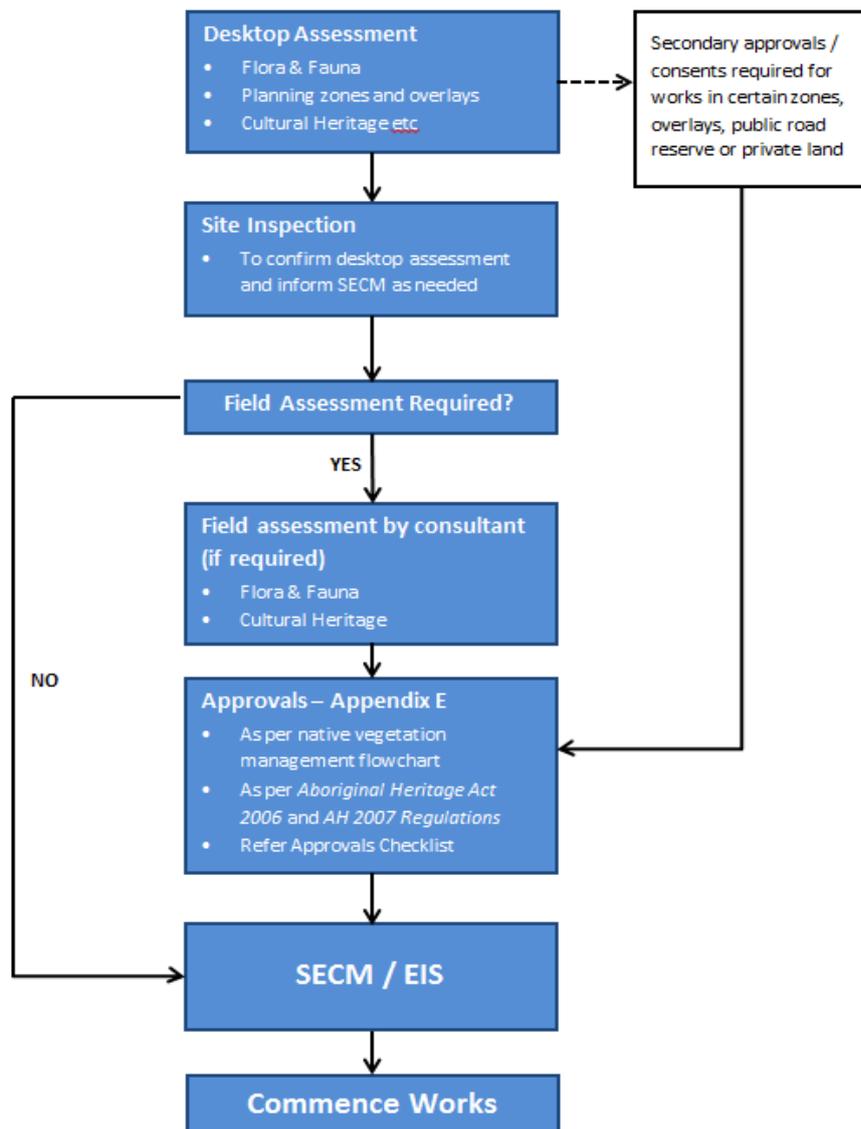


Figure 6 - Due diligence process flowchart

3.3.1 Desktop assessment

All construction sites are subject to a desktop assessment prior to commencement of work. The results are used to determine what environmental or cultural heritage consents and/or approvals are required for a particular work site. This process will inform what site specific management measures are required for site implementation (site measures detailed in [Section 3.4](#)).

The GMW Connections Project has undertaken a desktop assessment for all of their assets within the GMID (which includes what agency consents/approvals are required). The spreadsheet is based on GIS planning layers provided by government sources (including DataSearch Victoria, DataVic and Victorian Spatial Datamart) and shape-files based on relevant consultant assessments. The information layers cover works conducted on GMW owned or managed assets. The GMW desktop assessment is available for Contractor use.

The GMW desktop assessment has also been undertaken for private land, although this at a property level only. This assessment is to flag to Contractors which OFW properties have no further planning requirements and which to focus efforts on to address the planning issues identified. Where the desktop assessment identifies areas for further review, the Contractor can access relevant online tools and / or GMW's Dekho* layers to fulfil planning requirements and refine the review to match the final construction alignment. This information includes mapping of potential Matters of National Environmental Significance (MNES).

* Dekho is Goulburn-Murray Water's Enterprise GIS software.

Due diligence procedures and additional guidance on planning requirements are available in **Appendix C**.

The desktop / Dekho assessment results will be incorporated into the SECM to inform site personnel of potential environmental and cultural heritage values that may be present on site.

Flora and fauna

Examples of additional online tools available to inform / complement the desktop assessment:

- Native Vegetation Information System (NVIM)
- MNES Protected Matters Search Tool (DoE)
- Biodiversity Interactive MapVictoria Biodiversity Atlas
- Bio-maps
- Birdata; and
- Relevant aerial imagery

Victoria's Tree Protection Zone (TPZ) policy also requires consideration in planning. The TPZ is a prescribed setback around native trees to prevent potential damage to tree roots and impacting on overall tree health. The TPZ is drawn from the Australian Standard 4970 – Retention of Trees on Construction Sites. The GMW Connections Project has agreement with DELWP on the minimum setbacks to apply by activity type.

Specific procedures and guidance for flora and fauna due diligence planning including native vegetation management, MNES and TPZ are contained in **Appendix C**.

Aboriginal Cultural heritage

The desktop assessment is designed to identify the likely impacts of works on Aboriginal cultural heritage. The desktop assessment will identify:

- Areas of Cultural Heritage Sensitivity (also available via 'Planning Maps Online'); and
- Victorian Aboriginal Heritage Register (VAHR) accessed via Aboriginal Victoria (AV) website.

The output from the cultural heritage desktop assessment will be used to determine the need for further assessment or Cultural Heritage Management Plan (CHMP). The Cultural Heritage planning requirements for Capital Works and OFW is contained in **Appendix C**.

Non-aboriginal heritage

The desktop assessment will identify whether works are located within a Heritage Overlay or in the vicinity of a site registered on the Victorian Heritage Register. If a Heritage Overlay is present and where a planning permit would have otherwise been triggered, a report must be prepared by a qualified heritage advisor and written consent from the relevant local council must be sought.

Acid sulfate soils

The desktop assessment will consider the risk of encountering acid sulfate soils at the site. This information is also available on Dekho. Acid sulfate soils can form when sulfide rich soil is exposed to air. Subsequent oxidisation of the sulfides produces acid forming sulfates. In a waterbody the pH can dramatically reduce. Such acidic water can destroy the aquatic system leading to a “dead” waterbody full of rotting organic matter, depleted of dissolved oxygen and potentially impeding its function within the landscape for years to come. Potential acid sulfate soils usually form from marine sediments and therefore are more commonly found near coastlines. There are isolated pockets of potential acid sulfate soils within the GMID, although EMP activities are unlikely to impact on these areas. Although the risk is predominantly low to very low within the GMID, Contractors should be aware of acid sulfate soils because of the possible damage that could occur in the landscape if not identified and appropriately managed.

A reference map is attached in **Appendix C**. Contingency measures are available in the Field Handbook

Public Roads & Land, Planning zones and overlays

The desktop assessment will identify whether works are to occur in any of the following zones, overlays or areas:

- Urban Floodway Zone
- Floodway Overlay
- Land Subject to Inundation Overlay
- Public Acquisition Overlay
- Public Land

As per the Incorporated Document conditions outlined in Table 3, if any of the above overlays apply to works, written consent must be obtained from the relevant CMA (column 1 overlays).

Where a Public Acquisition Overlay (PAO) is in place on a parcel of land, written consent is required from the local council, or the relevant acquiring authority, before any works can commence.

For Public Roads, written consent/works permit is required from VicRoads for works in the reserves of state roads, and the relevant shire for works in the reserves of local roads. ‘Works’ includes ancillary activities such as vehicle/plant access and stockpiling of materials (see Table 3 – *Road Management Act 2004*).

For any other Public Land, written consent is required from the relevant public land manager. Additionally a licence may be required for infrastructure works on public land managed by Parks Victoria or DELWP. Refer to the Environmental Infrastructure Register section over-leaf.

Weed & Disease

The desktop assessment will identify sites that are located in declared weed / disease areas i.e. Phylloxera Infected Zone, Risk Zone and Exclusion Zone. **Appendix C** contains information about the significant weed species identified within the GMID. It also provides some relevant mapped information and descriptions of key diseases to be aware of.

Proximity to waterways

The desktop assessment will identify proximity to the nearest waterway (for reference).

Environmental Infrastructure Register

The Environmental Infrastructure Register (EIR) contains a list of assets that are associated with the delivery of environmental water to wetlands, lakes, swamps or other environmental features. The environmental water is an entitlement held by the state government. Prior to the decommissioning or relocation of any of these assets, the GMW Connections Project must consult with the relevant agencies as to the treatment of these assets or to negotiate another suitable supply point.

The EIR information will be included in the desktop assessment available on Dekho so that Contractors are aware to check that consents/agreements are in place prior to works commencing. If a work site contains an asset on the EIR, contact a member of the GMW Connections Project Environment team.

3.3.2 Site verification

Following the desktop assessment, site verification will be undertaken as required to confirm desktop results. Some general triggers may be:

- If there is a significant amount or high density of vegetation at site;
- If there is any unidentifiable native vegetation based on aerial imagery;
- If there is Location B or C vegetation; or
- To distinguish between indigenous, non-indigenous or landscape/amenity trees which landholders may prefer to have retained).

Site verification can also be used to identify opportunities to further minimise impacts to native vegetation. The site verification should be completed by the Contractor's Environmental Manager/Coordinator, Site Supervisor, suitable Project Manager or delegate to inform the SECM.

3.3.3 Field surveys

Flora and fauna

Based on the results of the desktop assessment and site verification, the requirement for a flora and fauna assessment by a qualified consultant will be determined in accordance with relevant guidance contained in **Appendix C**.

The output of the flora and fauna assessment (if required) is a report including, but not limited to:

- Identification, location, extent and quality (in accordance with the Permitted Clearing of Native Vegetation - Biodiversity assessment guidelines) of potentially impacted indigenous native vegetation;
- Identification and location of weeds and exotic/non-indigenous flora;
- Presence of EPBC or FFG Act listed species;
- Identification and location of other notable site environmental characteristics;
- Identification of "no-go" areas to avoid impacts on known environmental values; including EPBC Act listed species and other MNES (see 'MNES procedure' in **Appendix C** for measures to avoid potentially significant impact to MNES);
- Guidelines and controls to ensure that statutory requirements for the protection of threatened species and habitats are achieved during construction; and

- GIS shape-files of habitat hectare assessments and associated offset requirements (in suitable format for DELWP).

Relevant information from the report will be input into the SECM.

The scope of any field flora and fauna assessment should include the requirement for the consultant to upload any FFG or EPBC ACT flora or fauna species to the relevant state databases, so as to build on the state's mapped data.

3.3.4 Site Environmental Control Map

A Site Environmental Control Map (SECM) will be prepared for every EMP construction site. The SECM will identify areas requiring protection and will detail any site specific environmental or cultural heritage controls. A SECM will include as relevant:

- Site layout including approximate dimensions of the construction footprint;
- 'No go' areas i.e. native fauna habitat, MNES or indigenous native vegetation requiring protection; any cultural heritage sensitivity areas (or as defined in a CHMP);
- Any indigenous native vegetation / trees approved for removal (including exotic or non-indigenous trees);
- Any declared weed / disease / acid sulfate soil areas (refer to desktop assessment information);
- Site access;
- Any laydown or silt disposal areas;
- Any wash / clean down or refuelling areas; and
- Any council or VicRoads road reserve or Crown Land areas (marked up with any relevant items above).

Template forms to record landholder consent in relation to access tracks, laydown, & silt disposal areas and borrow pits occurring on private land are available in **Appendix F**. The extent of works or activities on private land is to be shown in the forms.

The Contractor is responsible for preparing and approving the SECM and ensuring that works are undertaken in accordance with the SECM. If SECM is altered in the site-set up or construction phase, it must re-submitted for approval and changes communicated to site personnel where there are additional environmental or cultural heritage matters to manage.

Environmental Information Sheet

Contractors can elect to include all relevant environmental and cultural heritage specifications on the SECM or to supplement the SECM with additional commentary or requirements in an EIS. If produced the EIS must be communicated as part of the Environmental Site Induction (in addition to the SECM).

3.3.5 Approval and consents checklist

All required due diligence, approvals and consents must be identified and sought prior to works commencing. An Approvals Checklist is available in **Appendix F**.

3.4 Site management and mitigation measures

This section outlines the Contractor's general obligations in relation to the protection of environmental / heritage values and preventing adverse impacts. The site management measures are detailed in the 'GMW Connections Project - EMP Field Handbook' (**Appendix F**). The Contractor is to ensure that sub-contractors comply with these environmental protection measures which can be communicated in the SECM / EIS / Environmental Site Induction.

GMW Connections Project can potentially impact on flora, fauna and / or cultural heritage values via the following pathways:

- Undertaking unauthorised works;
- Earthworks;
- Placement of stockpiles, materials and chemicals;
- Accidental spread of weed / disease via movement of vehicles and plant;
- Poor site waste management or disposal practices;
- Inappropriate storage of chemicals/fuels; or
- Poor incident / emergency response processes.

The environmental management standards provided in the Field Handbook serve to address the above risks at a site level. The controls have been developed in reference to the Project Environmental Risk Register, relevant legal and other requirements and conditions of permits and approvals.

3.4.1 Flora and fauna management

Although the landscape within the GMID is largely disturbed, there are still patches of remnant vegetation and scattered trees that may be present at, or near a work site. The remaining native vegetation in the landscape can be quite valuable and provide habitat or corridors that support wildlife (and potentially threatened species). Native fish are also commonly found in the channels within the GMID.

In order to preserve and maintain these values into the future, the Contractor will comply with the state's Native Vegetation Policy requirements and the various flora and fauna permits provided in Appendix B. Avoiding and minimising impacts to native vegetation and fauna is the key objective (primarily in the site design phase). Where impacts to native vegetation are unavoidable (including TPZ impacts), proposed removals must be offset before works commence.

Where works are in the vicinity of a tree of landscape significance, any impact will occur in consultation with the Contractor, GMW Connections Project and the landowner as required. The control measures will be conveyed to site contractors through the SECM or EIS.

Any native fauna or wildlife that is relocated or impacted requires a record to assist the GMW Connections Project in fulfilling its external reporting and notification requirements. See Table 5 - *Contractor reporting and notification requirements* for details.

3.4.2 Cultural and Non-aboriginal heritage management

Aboriginal cultural heritage places exist across most areas of the Victorian landscape and are protected under the *Aboriginal Heritage Act 2006*. Many Aboriginal places have been found in the northern irrigation region and are recorded on the Victorian Aboriginal Heritage Register (VAHR) hosted at the Office of Aboriginal Victoria (OAV). Whilst the locations of registered items are known, many more places remain undiscovered. These may be visible on the surface of the ground or they may exist

under the ground. Contractors are required to follow the Cultural Heritage Planning Requirements in **Appendix C** to determine the need for a due diligence assessment, voluntary or mandatory CHMP.

Contractors are to arrange Cultural Heritage Awareness training for their staff and site contractors as appropriate. Site mitigation measures and descriptions of Aboriginal places and artefacts are contained in the Field Handbook.

The GMW Connections Project has an Agreement with Yorta-Yorta Nation Aboriginal Corporation (YYNAC) that makes provision for field monitoring services and to facilitate communications and consultation processes between the project, its Contractors and YYNAC. The YYNAC is the predominant Registered Aboriginal Party within the GMID.

Where works are within a Heritage Overlay and works would have otherwise triggered a planning permit, a Heritage Report will be developed and signed off by the relevant council prior to commencing works. The control measures are conveyed to site contractors through the SECM or EIS.

3.4.3 Weed, disease and soils management

Weeds, invasive plants and diseases pose a serious threat to primary production and biodiversity in Victoria. Many have the potential to reduce agricultural productivity, displace native species, threaten social values and contribute significantly to land and water degradation.

Contractors must ensure that the SECM / EIS identifies whether the site has potential acid sulfate soils, or is in a declared weed / disease area. Under the *Catchment and Land Protection Act 1994* certain plants are declared noxious in Victoria and are classified into the following categories based on distribution and the threat posed to the State:

- Regionally prohibited weeds;
- Regionally controlled weeds; or
- Restricted weeds.

State prohibited weeds are considered to be those plants which pose the greatest risk to Victoria and are declared on the basis that they either do not yet occur in Victoria or are present and it is reasonable to expect that they can be eradicated. Control of State prohibited weeds is the responsibility of the Victorian Department of Economic Development, Jobs, Transport and Resources (DEDJTR) and any sightings can be reported to DEDJTR.

Regionally prohibited weeds are classified as plants that do not occur in a region, or are not widely distributed across a region but are capable of spreading further in the region. For a plant to be declared as regionally prohibited it must be reasonable to expect that it can be eradicated from the region. Land owners and public authorities responsible for Crown land management (including GMW on irrigation channels and VicRoads on freeways), must take all reasonable steps to eradicate regionally prohibited weeds on their land.

Regionally controlled weeds are widespread and considered important in the region. To be declared regionally controlled, the species must be capable of spreading further within the region and the Minister must also be satisfied that it should be stopped from doing so. These species require continued control measures to prevent further spread to clean areas. Land owners, including public authorities responsible for Crown land management (including GMW on the irrigation channel), must take all reasonable steps to prevent the growth and spread of regionally controlled weeds on their land.

Restricted weeds seriously threaten primary production, Crown land, the environment or community health in another State or Territory and have the potential to spread into and within Victoria. There is no requirement for land managers to control restricted weeds on their property, however, they cannot be traded or transported within Victoria.

The Field Handbook contains site management to minimise the spread of noxious weeds, agricultural weeds and diseases through delivery of construction activities.

3.4.4 Water quality & sediment control

Construction works will predominantly occur in and around the channel network and involve earthworks and use of plant and machinery. Water quality within the channel may be degraded as a result of a leakage/spill of chemicals and fuels or uncontrolled sediment discharge.

The Field Handbook recommends measures for appropriate management of the above and has been prepared in consideration of the relevant Environment Protection Authority (EPA) guidelines.

3.4.5 Chemical and fuel management

The appropriate site management and incident response measures are detailed in the Field Handbook.

3.4.6 Amenity – air quality, noise and vibration

Construction activities may involve earthworks, temporary stockpiling of spoil and engineering works such as concrete cutting and vehicle movements on unsealed roads. This has potential to generate dust. Operation of construction plant, equipment, machinery and vehicles will generate exhaust emissions as well as noise.

Construction activities will be limited to between 7am and 6pm weekdays and 7am to 1pm Saturday, within 200m of any residences unless otherwise negotiated with affected landowners.

The Field Handbook includes measures to address impacts to matters associated with public amenity. These measures are consistent with the requirements of the EPA Environmental Guidelines for Major Construction Sites and Air Quality Management.

3.4.7 Waste management

Typical wastes generated from channel upgrade and reconfiguration works include concrete rubble, timber and metal waste generated by the removal of old drop bars, meters and walkways. Installing new regulator gates in pre-existing emplacements minimises wastes. Spoil may be used on-site to fill in disused channels. Where topsoil is present, it will be stripped and stockpiled and used for site rehabilitation.

Prescribed wastes may be generated which can include asbestos (all forms), contaminated soil (category A, B or C), chemicals, cleaning agents, inert sludges or slurries, vehicle and machinery washwaters with or without detergents, waste oil and water mixtures or emulsions.

General rubbish may also be removed from channels (tyres, car bodies, containers, etc) as part of dewatering and desilting of the irrigation channel.

The Field Handbook outlines the appropriate waste management and disposal measures.

3.4.8 Fire management

Construction works may occur during the Fire Danger Period (the Fire Danger Period can vary between councils so check for any declarations on the Country Fire Authority website) and in areas classified as being a high fire risk.

Inappropriate disposal of items such as cigarette butts or matches may result in a fire, which if inappropriately managed and combined with certain weather conditions, could lead to wildfire and widespread damage or loss of property and life. Environmental consequences of wildfire include loss of flora and fauna, poor air quality, and poor water quality (through ash, loss of groundcover leading to erosion and sedimentation etc).

The Field Handbook outlines measures to minimise the risk of fire. The Contractor or Site Contractor must have an appropriate Emergency Response Plan which includes responding to fire events.

4. Communication, records & reporting

To meet approval requirements the GMW Connections Project (and its Contractors) is required to report on compliance performance on a regular basis to regulators. The GMW Connection Project may request information pertaining to the below details at any time.

4.1 Contractor registers

To record an appropriate level of information the Contractor must maintain (at a minimum) the following registers, database or information:

- Incident and non-conformance
- Site inspection records
- Landholder complaints
- Native fauna relocations
- Fish deaths
- Native vegetation removal and offsets
- Plant/vehicle clean down

See **Appendix E** for list of registers/information for Contractors to maintain.

4.2 Reporting & notifications

The GMW Connections Project sends a Monthly EMP Performance Report and various annual reports to DELWP. To facilitate reporting activities, the Contractor is required to comply with the reporting and notification requirements set out in Table 5.

Table 5 - Contractor reporting and notification requirements

Type of report / notification	To whom	Timing & reporting details
Emergencies and Incidents (refer Section 3.2.4 for examples)	GMW Connections Project Environment team	GMW Connections Project Environment team and GMW Connections Project Construction team to be notified via email/telephone as soon as practicable (for external notification and reporting as required).
Major non-conformances	GMW Connections Project Environment team	GMW Connections Project Environment team to be notified of major findings observed during site inspections via email/telephone as soon as practicable (for reporting as required).
Landholder /General Public complaints	GMW Connections Project Engagement team	Contractor to summarise complaint and provide relevant details via email to connectionscomplaint@gmwater.com.au or GMW Customer Support Centre 1800 013 357as soon as practicable. Alternatively the Contractor can provide the complainant with GMW contact details (Appendix G).

Type of report / notification	To whom	Timing & reporting details
Relocation or translocation of aquatic or terrestrial native fauna	GMW Connections Project Environment team	Include summary of relocation details in Monthly EMP report (update information is to include location of capture, release location, date of event, number and species relocated). GMW Connections Project Environment team must be notified of any potential translocation of permitted native fish from the GMID to the Murray River at least 72 hours prior to dewatering activities (see P10/0071-2.0 Appendix B).
Native vegetation removal and offsets	GMW Connections Project Environment team	Native vegetation removal and offsets register to be maintained. GMW Connections Project will periodically request information for preparation of an annual offset plan to regulators.
Contractor Monthly EMP Compliance Report	GMW Connections Project Environment team	Monthly (due within a month following the reporting period). See Appendix H for reporting template to be filled.

4.3 Toolbox & HSE forums

Similar to Health and Safety communications, 'Environment & Cultural Heritage' is expected to be a standing agenda item at any Contractor Toolbox or Health, Safety & Environment (HSE) forum meetings. Discussion topics may include:

- Application of environmental or cultural heritage controls (to give contractors / sub-contractors an opportunity to share the most efficient ways of implementing on-ground).
- Lessons learned from any environmental incidents that have occurred.
- Refresh on EMP requirements in response to any audit findings (this constitutes ongoing, informal EMP training for contractors and sub-contractors); and
- New procedures/requirements issued by GMW or regulators.

4.4 Meetings with GMW Connections Project

The Contractor's Environment Manager/Coordinator or relevant support staff will meet regularly (as scheduled) with the GMW Connections Project Environment team. The meetings are to discuss/clarify compliance matters associated with EMP implementation.

5. Continual improvement

The GMW Connections Project is committed to identifying opportunities for continual improvement in relation to supporting EMP implementation. The key drivers for continual improvement are outlined below.

5.1 Inspections and audits

5.1.1 Contractor inspections

The Contractor's Environment Manager/Coordinator is responsible for arranging a program of internal inspections of compliance with the requirements of this EMP. Inspections will be carried out for each activity type in considering the specialisation of works contractors. Contractor inspections must meet the following targets (at a minimum):

Capital Works

- 2% of regulator per irrigation area per year (low risk);
- 2% of meter sites per irrigation area per year (low risk);
- 5% of channel remediation/enhancement sites per irrigation area per year;
- 5% of decommissioning sites per irrigation area per year; and
- 5% of pipeline sites per irrigation area per year.

OFW

- Landholder works with identified native vegetation, cultural heritage or other planning issues must be inspected at least once during the construction phase.

The breakdown by irrigation area is to ensure that all work package contractors are inspected at least once (to prevent over-inspection of any one works contractor in particular). The Contractor may wish to increase the number of inspections for any new works contractors or as part of operational risk management.

The site Contractor will undertake daily or periodic routine inspections as appropriate and maintain records for review (upon request). See **Appendix F** for template guidance.

If a non-conformance is identified by the Contractor, appropriate measures must be undertaken to ensure that corrective and preventative actions are implemented and documented or recorded.

5.1.2 Audits

The Contractor will be subject to the following audits required by the CEMF:

- Regular internal audits of Contractor compliance with the EMP. These audits are undertaken by the GMW Connections Project or delegate;
- Independent audit of Contractor compliance with the EMP. The Secretary DELWP approves the appointment of the independent auditor and receives a copy of the final audit report for review; and
- Other audits as requested by DELWP (or other regulating agency).

The contractor may elect to undertake additional audits of their own.

5.2 EMP Review

The GMW Connections Project will periodically facilitate a review of the effectiveness and currency of the EMP i.e. in response to changes to the scope of EMP activities, updated / new legislation, regulations or policies or based on feedback from regulating agencies. Relevant Contractor staff will be expected to participate in EMP reviews.

The EMP review will consider the following (but not limited to):

- Effectiveness of EMP implementation (including desktop assessment);
- Changing circumstances, including changes in legal and other requirements;
- Adequacy of resources / organisation changes;
- Auditing and inspection results;
- Effectiveness of the environmental training and induction program;
- Relevant non-conformances or corrective actions; and
- Communications from external interested parties, including complaints

DELWP and other agency representatives may be in attendance or included in correspondence in any scheduled EMP reviews.

Contractors are required to comply with whichever EMP is approved.

APPENDICES

APPENDIX A – Approved Incorporated Document

APPENDIX B – Current flora & fauna permits

APPENDIX C – Due diligence & planning guidance

APPENDIX D – CMA consent exemptions

APPENDIX E – Contractor registers & records

APPENDIX F – Work package / site form templates

APPENDIX G – Public complaints process

APPENDIX H – Monthly report template

APPENDIX A

Approved Incorporated Document

Goulburn-Murray Water Connections Project –Incorporated Document

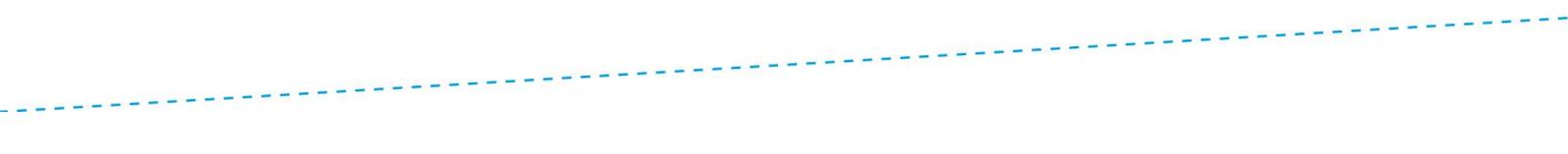
August 2015

Incorporated document under section 6(2)(j) of the *Planning and Environment Act 1987*



APPENDIX B

Current flora & fauna permits



APPENDIX C

Due diligence planning guidance

The GMW Connections Project Desktop Assessment for both Capital Works and OFW is a preliminary query against environmental and cultural heritage planning spatial layers. This information is provided to Contractors on which to base more detailed assessments as guided by the following attachments:

Tree Protection Zone – planning requirements

Native Vegetation Management Compliance Guidelines

MNES Planning Procedure

Cultural Heritage Planning Requirements

Weeds, Disease and Soils

Borrow Pit Development Procedure

GMW-VicRoads Agreement (Annexure A)

APPENDIX D

CMA consent exemptions

NB – this consent letter is presently being reviewed by the relevant Catchment Management Authorities (to provide further exemptions and determine potential for standardised conditions for other OFW activities as appropriate).

APPENDIX E

Contractor registers & records

The Contractor is required to maintain the following registers / folders / files to ensure that appropriate records are readily available to meet information requests by the GMW Connections Project, regulating agencies or auditors:

TRAINING

- Records of environmental / cultural heritage training undertaken by Contractor staff
- Attendance log of any environmental / cultural heritage training delivered by the Contractor

NATIVE FAUNA / FISH RELOCATION

- Include location of capture, release location, date of event, number, species relocated and by whom

MONITORING REGISTERS

- Incident / Emergency log
- Contractor Site Inspection / non-conformances log
- Plant Clean down records (appropriately filed if not in a register)

NATIVE VEGETATION & OFFSETS REGISTER

- Include details or retain information on proposed removals, removal approvals, offset requests/approvals, actual removals

APPENDIX F

Work package / site form templates

Project Manager and / or Site Supervisors are to ensure their completion as required:

Approvals Checklist – including land manager & landholder

Contractor Site Inspection template

Environmental Incident & Non-Conformance Template

Fish Death Record

Native Fish & Fauna Relocation Form

Plant Clean Down Record

Private Access, Silt Disposal and Laydown Approval Form

SECM/EIS (to form basis of environmental site induction)

GMW Connections Project EMP Field Handbook (copies available from GMW Connections Project Environment team)

APPENDIX G

Public complaints process

All construction related complaints to be lodged via connectionscomplaint@gmwater.com.au or the GMW Customer Support centre on 1800 013 357

Complaints received by the Connections Project should be managed according to:

CONNECTIONS PROJECT OPERATIONAL RULE - COMPLAINTS & ENQUIRIES MANAGEMENT (DM # 4274844).

APPENDIX H

Monthly report template

Please complete and send to the GMW Connections Project Environment team to compile by mid-month following the reporting period.