



Victorian Mallee Irrigation Development Guidelines / 2021



Acknowledgements

The Mallee Catchment Management Authority (CMA) acknowledges and respects Traditional Owners, Aboriginal communities, and organisations. We recognise the diversity of their cultures and the deep connections they have with Victoria's land and waters.

We value partnerships with them for the health of people and country. Mallee CMA Board, management and staff pay their respects to Elders past and present, and recognise the primacy of Traditional Owners' obligations, rights, and responsibilities to use and care for their traditional lands and waters.

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3. Murray River at Nangiloc
4. Pumps and Diverters

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Contents

Acronyms in this document	3
Glossary of terms	4

1 Introduction	6
1.1 Purpose	6
1.2 Process for endorsement and approval	7
1.3 Water use licences	7
1.4 Take and use licences (T&UL)	8
1.5 Works licences (WL)	8
1.6 When the guidelines do not apply	9
1.7 Review of the guidelines	9

2 Irrigation Development Assessment Process	10
2.1 General overview	10
2.2 Application response times	10
2.3 Costs associated with the processing of applications	10
2.4 Appeals process	11

3 Roles and Responsibilities	18
3.1 The applicant	18
3.2 Irrigation development group	19
3.3 Irrigation Development Coordinator (IDC)	19
3.4 Water corporations	20
3.5 Department of Environment, Land, Water and Planning (DELWP)	20
3.6 Department of Jobs, Precincts and Regions (DJPR)	21
3.7 Mallee Catchment Management Authority (CMA)	21
3.8 Local Government	21
3.9 Parks Victoria	21
3.10 Registered Aboriginal Parties and First Peoples - State Relations	22

4 Information requirements and technical assessments	23
4.1 Public land manager consent	23
4.2 Works plan to inform the works licence	23
4.3 Irrigation drainage plan that informs the WUL	24
4.4 Further information	30

5 Other approvals required for irrigation development	31
5.1 Overview	31
5.2 Aboriginal heritage	31
5.3 Public land manager consent	32
5.4 Local council requirements	33
5.5 Planning permits	33
5.6 River murray and nsw approvals	34
5.7 Environmental protection and biodiversity conservation	35
5.8 Flora and fauna conservation	35
5.9 Environment Effects Act 1978	36
5.10 Wildlife protection and conservation	36
5.11 Floodplain management and works on waterways	37

6 References	38
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7 Appendix 1: Legislative Framework and Mallee Regional Catchment Strategy Context	39
7.1 Overall framework	39
7.2 Victorian Water Act 1989	39
7.3 Catchment and Land Protection Act (CALP) 1994	43

8 Appendix 2: Victorian Mallee New Irrigation Development Group - Terms of Reference	46
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9 Appendix 3: Process for assessing and approving Annual Use Limit (AUL) higher than Schedule 2 of the Standard Water Use Conditions	49
9.1 Annual use limits on WUL	49
9.2 Process for determining applications for issuing aul using mars above schedule 2	49

10 Appendix 4: Works License Conditions and Water- use License conditions are available in the Victorian Water Register	51
Works on waterways	51
Works associated with works on a waterway	54
Bore construction and operation	56

11 Appendix 5: Water-Use Licence Condition Sets and Examples of Particular Conditions on Water-Use Licences – In the Victorian Water Register	59
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12 Appendix 6: Mallee Irrigation Development Guidelines Factsheets/Forms	62
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Acronyms in this document

AHD	Australian Height Datum	ML	Megalitre
AUL	Annual Use Limit	NRE	Natural Resources and Environment (Department of, now part of DELWP/DJPR)
BSM2030	Basin Salinity Management 2030	NRM	Natural Resource Management
CHMP	Cultural Heritage Management Plan	NRSWS	Northern Region Sustainable Water Strategy
CMA	Catchment Management Authority	N2SAB	Nyah to South Australian Border
DPI	Department of Primary Industries (Now part of DJPR)	PLM	Public Land Manager
DSE	Department of Sustainability and Environment (Now part of DELWP)	PV	Parks Victoria
DJPR	Department of Jobs, Precincts and Regions	RAP	Registered Aboriginal Party
DELWP	Department of Environment, Land Water and Planning	RCS	Regional Catchment Strategy
EC	Electrical Conductivity	SAAC	Salinity Accountability Advisory Committee
GMW	Goulburn-Murray Water	SIZ	Salinity Impact Zone
GWMW	Grampians-Wimmera Mallee Water	SMP	Salinity Management Plan
Ha	Hectare	VCAT	Victorian Civil and Administrative Tribunal
Ha/yr	Hectares per year	VMIDG	Victorian Mallee Irrigation Development Guidelines
HIZ	High Impact Zone	VPP	Victorian Planning Provisions
ID	Irrigation Development	VWR	Victorian Water Register
IDA	Irrigation Development Application	WC	Water Corporation
IDC	Irrigation Development Coordinator	WP	Work Plan
IDG	Irrigation Development Guidelines	WUL	Water Use Licence
IDP	Irrigation and Drainage Plan		
LIZ	Low Impact Zone		
LOC	Landowner Consent		
LMW	Lower Murray Water		
LWMP	Land and Water Management Plan		
MAR	Maximum Application Rate		
MDBA	Murray-Darling Basin Authority		

Glossary of terms

Annual Use Limit (AUL)

The maximum volume of water that in any twelve month period may be applied to the land specified in a water use licence or water use registration.

Basin Salinity Management 2030 (BSM2030)

A basin-wide strategy developed by the Murray-Darling Basin Authority together with Basin governments to manage salinity in the Basin over a fifteen year period. The strategy builds on the successes of the Basin Salinity Management Strategy (2001-2015).

Biodiversity

The variety of all life forms – the different plants, animals and micro-organisms, the genes they contain, and the ecosystems of which they form a part of.

Catchment Management Authority (CMA)

Statutory body established under the Catchment and *Land Protection (CaLP) Act 1994*. CMAs have responsibilities under both the *CaLP Act 1994* and the *Water Act 1989*, which include river health, regional and catchment planning and coordination, and waterway, floodplain, salinity and water quality management.

Declared Water System

A declared water system is a water system that has been declared in accordance with Section 6A of the *Water Act 1989*. Water rights and Take and Use Licences (TUL) in declared water systems have been converted into unbundled entitlements.

Delegate

A person to whom the power is delegated under the instrument of delegations.

Delivery Share

An entitlement to have water delivered to land in an irrigation district and a share of the available water flow in a delivery system.

EC Units

Electrical Conductivity provides a fast and convenient way to measure salinity. Sea water has a salinity of about 50,000 EC Units.

Extraction Share

A share of the total amount of water that can be drawn from regulated rivers at a certain point over a given period of time. Extraction shares are used to restrict water extraction in times of high demand. The extraction share is expressed as a condition on a works licence.

Groundwater

All subsurface water, generally occupying the pores and crevices of rock and soil.

High-reliability Water Share

A water share against which seasonal allocations made as a first priority. High-reliability water-shares are expected to reach 100% allocations in 95 years out of 100.

Irrigation and Drainage Plan (IDP)

An application for a new water use licence or for a variation to a water use licence which must be accompanied by an irrigation and drainage plan. The IDP must provide the information necessary to demonstrate how the development meets the necessary standards to minimise the impacts of water use on other persons and the environment (in particular waterlogging, salinity and nutrient impacts).

LIZ /HIZ

Low Impact Zones /High Impact Zones: Salinity impact zones that define areas in which irrigation has different levels of salinity impact on the river; irrigation development is allowed in all zones subject to trade in annual use limits, and in the Low Impact Zones additional annual use limits can be issued subject to a differential charging system.

Maximum Application Rates (MAR)

The maximum application rates (in megalitres per hectare per year), which are to be used in conjunction with irrigated areas (in hectares) to determine annual use limits on water use licences. The MAR are defined in Schedule 2 of Standard Water Use Conditions which apply to all water-use licences.

Megalitre (ML)

One million litres.

Ministerial Water Use Objectives

Defines the objectives for water use licence conditions. These are a) managing groundwater infiltration, b) managing the disposal of drainage, c) minimising salinity, d) protecting biodiversity, e) minimising the cumulative effects of water use.

Pumped Irrigation Districts

Irrigation districts supplied by large pumps capable of supplying multiple irrigators at once.

Salinity Credit Allowance

Entitlements to increase river salinity at Morgan. These are only earned at the State level in return for investments that reduce River salinity by at least the same amount if not more.

Seasonal Water Allocation

The amount of water available for a water year, determined by the Water Corporation and expressed as a percentage of a water share. Sometimes this term is shortened to 'allocation'.

Standard Water Use Conditions

The standard conditions that apply to all water use licenses including an annual use limit to ensure irrigation is carried out in accordance with Ministerial Water Use objectives. In addition to these there can be conditions recorded on each water-use licence are specific to local areas.

Take and Use Licence (T&UL)

A fixed term entitlement to take and use water from unregulated water systems such as: a waterway, catchment dam, spring, soak or aquifer. In the Mallee, these licences enable groundwater extraction in the Murrayville Groundwater Management Area. Each licence is subject to conditions set by the Minister and specified on the licence.

Unbundling

The conversion of a prior water right, or take and use licence, in a declared water system into three separate entitlements being: a water share, a delivery share or extraction share, and a water use licence. The term unbundling refers to the separation of water entitlements from land (30 June 2007).

Water Corporation

Corporations established under the *Water Act 1989* that have responsibilities to supply water for urban, irrigation, domestic, stock and commercial use in irrigation districts and water districts. Some corporations also have delegated responsibilities for controlling the diversion of water from waterways, passing flows and the extraction of groundwater.

Water Entitlements

A generic term that encompasses water shares and take and use licences.

Water Share

A Water Share is a legally recognised, secure share of the water available for use in a defined water system. A water share is specified as a maximum volume of seasonal allocation that may be made against that share. Water shares may be high or low-reliability.

Water Use Licence (WUL)

A licence that authorises the use of water from a regulated system for the purposes of irrigation on the land specified under that licence. The licence sets out the conditions for use, such as how much water can be used on the specified parcel of land in a single irrigation season. A WUL is needed to irrigate the property and the licence is tied to the land.

Works Licence (WL)

A licence that authorises the construction, alteration, operation, removal or decommissioning of: any works on a waterway, or a bore, or a dam belonging to a prescribed class of dams.

1 Introduction

Victorian Irrigation Development Guidelines

1.1 Purpose

The Victorian Mallee Irrigation Development Guidelines (Guidelines) provide guidance for government agencies to process applications for new irrigation development. This includes:

- The roles and responsibilities of agencies
- The communication protocols between agencies
- The relevant legislation that underpins the approval to issue works licences, water-use licences, or take and use licences with site specific conditions (including annual use limits) that reflect the outcomes of the assessment processes
- Other approval processes triggered by irrigation development
- The development standards required to manage impacts on the environment and other values
- Linkages to other environmental or cultural heritage protection measures and agencies.

The Guidelines are available online for irrigation developers to inspect if they wish, but most communication occurs through a series of landowner

information factsheets (which are listed in Section 12). These are available to summarise the relevant sections of the guidelines for use by irrigation proponents.

Inter-agency co-operation is integral to the assessment and approval process. This is undertaken by the New Irrigation Development (ID) Group, which is made up of representatives from the Department of Job, Precincts and Regions (DJPR), Water Corporations, Department of Environment Land Water and Planning (DELWP) and the Mallee Catchment Management Authority (CMA). The ID Group is also supported by Parks Victoria (PV) and First Peoples - State Relations (FPSR) on matters of relevance.

An Irrigation Development Coordinator (IDC) from DJPR coordinates the ID Group and it generally meets on a monthly basis to discuss new applications and relevant issues.



Almonds, Nangiloc.

1.2 Process for endorsement and approval

The Guidelines provide a process for the irrigation development proposal to be assessed. When the ID Group are satisfied that the proposal meets the legislative requirements and is consistent with the Guidelines, the group endorses the proposal, any associated work plans (WP), Irrigation and Drainage Plans (IDPs) and may recommend site specific conditions, for a Works License (WL) and or a Water Use License (WUL). The decision maker (Water Corporation) is then notified of the ID Group endorsement.

Before issuing a WL or WUL the Water Corporation must be satisfied that cultural heritage requirements have been met. Under the *Aboriginal Heritage Act 2006* a decision maker cannot grant a statutory authorisation for an activity which requires a Cultural Heritage Management Plan (CHMP), until the CHMP is approved. Other approvals, such as native vegetation, public land manager's consent and planning permits can be finalised after the WL and WUL are issued. Under the *Water Act 1989*, the issue

of a licence does not remove the need to apply for any authorisation or permission necessary under any other Act with respect to anything authorised by the licence.

In applying conditions and endorsing irrigation development applications, the ID Group must take into consideration information provided by the applicant and ensure the information is adequate in demonstrating that the development complies with all relevant legislation and meeting the Ministerial Water Use Objectives for:

- Managing groundwater infiltration
- Managing disposal of drainage
- Minimising salinity
- Protecting biodiversity
- Minimising cumulative effects of water use.

The Guidelines assist in processing applications for new, or variations to, existing water use licences (WUL), take and use licences (T&UL) or works licences (WL).

1.3 Water use licences

The Guidelines apply to previously un-irrigated land for which there is no existing water-use licence. In issuing a new water-use licence on previously unirrigated land it is important to delineate, and to define with the use of coordinates, "the irrigation footprint", that is, the approved polygon, within a property title, on which water use is approved.

Expansion outside an approved polygon determines that the guidelines apply, unless this occurs as the result of the rearrangement of the irrigation design or headland arrangements within the envelope of a previous irrigation enterprise.

Under the *Water Act 1989*, inside irrigation districts, the polygon extends to the property boundaries. Outside the irrigation districts, for older licences issued before

1994, the polygon may be ill-defined, but where there is a reference to an "irrigated area" or a "licensed volume", a polygon may be inferred, ideally in conjunction with any available aerial or satellite imagery; this assessment is important where the irrigated area is small relative to the total area of the property.

Significant redevelopment might involve an increase in the annual use limit that applies within the existing irrigated polygon. In this case, the salient question is: would the proposed volume have been agreed to at the time the water-use licence was originally issued without any change in other conditions?

- If "yes" then the guidelines do not apply
- If "no" or "uncertain" then the guidelines do apply.

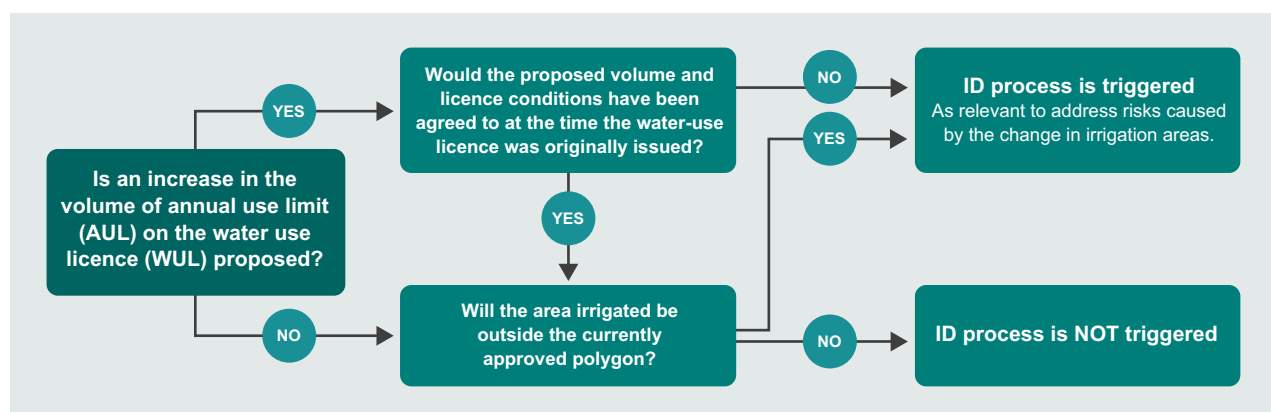


Figure 1-1 | Decision tree to determine when the Irrigation Development Guidelines are triggered for an existing WUL or T&UL.

1 Introduction

The question regarding proposed volume being agreed to can be answered by a reference to the maximum application rates (specified in Schedule 2).

When a change in irrigation infrastructure occurs, this may require going through the works approval process for a new or amended works licence.

Extraction share is issued as a condition on works licences. The issuing of additional extraction share may pose a risk to the deliverability of water for third parties. Therefore, applications that involve an increase in extraction share must be referred to the Minister for Water, or the Minister's delegate, as appropriate, before they can be approved in the water register.

1.4 Take and Use Licences (T&UL)

The Guidelines are also used in assessing applications to create a new T&UL for groundwater extraction. In the Mallee most of the groundwater is highly saline and unsuitable for either irrigation or stock and domestic use. There is a localised area near Murrayville, however, where a T&UL may be issued in order to extract groundwater from the underlying limestone aquifer for irrigation. These licences are managed within the Murrayville Water Supply Protection Areas (WSPA) and apply to Grampians Wimmera Mallee Water (GWMW) customers.

LMW also administer a limited number of T&UL.

The development application process follows the same steps as those undertaken for WULs and takes into account all of the same examples of irrigation development as stated above for WULs.

Each T&UL is subject to conditions set by the water corporation as the Minister's delegate.

Groundwater extraction within the Murray trench is not permitted as it is interlinked with the Murray water system which is a regulated water system and therefore requires a WUL to be issued, as opposed to a T&UL, by either GMW or LMW.

1.5 Works Licences (WL)

The Guidelines are used to process works licence applications and consider the appropriate standard and, where appropriate, particular conditions required to authorise the take, use, conveyance, and storage of water from Victorian waterways. The Guidelines will be initiated for works licence applications if (DSE, 2010):

- New works are required to deliver water to the land specified in a new licence application (or changing conditions)
- Existing works are being modified to deliver water to land specified in a new licence application.



River Pumps at Robinvale.



River Pumps at Robinvale.

1.6 When the guidelines do not apply

The ID assessment process for water use licences will not be initiated:

- When the sale of land, land subdivision or land consolidation requires the issuing of a new WUL on land already being irrigated, provided there is no net increase in the AUL or change in the approved polygon that is allowed to be irrigated
- Further land may be developed within the approved polygon provided the AUL specified in the WUL is not exceeded or increased above the maximum application rates. Note that the approved polygon in irrigation districts is the property boundary.

The requirement to prepare IDPs and the standard conditions for new or varied WULs will not apply in the following circumstances:

- Where a WUL is cancelled because part of the land to which it refers is transferred to a different party – new licences may be issued for each part of the land without the imposition of any extra conditions, provided that each licence has an appropriate share of the previous AUL and the sum of the new AUL is no greater than the previous AUL.

- Where irrigation is to be intensified on some land already covered by a licence and an increase in the AUL on the licence is sought, but is below the maximum application rates. WULs will apply, but with such modifications that are judged by the Minister (or delegate).

An application for a works licence being renewed, amended, or transferred may not necessitate the requirement of preparing a Works Plan if the Water Corporation deems that the works licence does not have significant deficiencies or amendments. The delegate may determine which, if any, of the standard conditions for works licences should be added to the licence.

Except for Cultural Heritage requirements, the issuing of a water use licence or a works licence cannot be withheld based on the requirements of other Acts of Parliament. However, it is important for proponents to be aware that the proposed developments may not proceed without first obtaining all necessary approvals (DSE, 2010).

1.7 Review the guidelines

The Mallee CMA is the custodian of this Guideline document which is reviewed and updated every three years. Each review is led by the Mallee CMA, in consultation with the agencies involved in their implementation, including the three Water Corporations (GMW, GMMW and LMW), DELWP, DJPR, Local Government Authorities and other Community and Industry Groups. The revised document is endorsed by Water Corporations, the Mallee CMA, DJPR and DELWP.

The Guidelines may be amended within this timeframe to improve clarity and accuracy. These are considered to be editorial in nature and therefore do not require broad consultation or separate agency signoff, but will be endorsed by the ID Group.

Further information about the application of the Guidelines or the irrigation development process can be obtained by contacting the IDC, DJPR located at Irymple.

2 Irrigation development assessment process

The Irrigation Development Coordinator and Agencies work together to advise the Water Corporation.

2.1 General overview

The process for assessing IDA in the Mallee region is presented in Table 2-1 and a flow chart in Figure 2-1. To facilitate the process, a dedicated IDC operates as a conduit between the applicant and the government agencies from the start to the completion of the assessment process. The ID Group does not approve irrigation development, its role is to review proposals and provide recommendations to the approval organisations – Water Corporations.

The level of information requested and other requirements are dependent upon the complexity and level of potential risk identified for the proposed development. A proposed development that has identified impacts on the

environment such as groundwater rise, native vegetation removal, or large scale land use changes, for example, may be required to provide more comprehensive information and employ suitably qualified experts. While for redevelopment proposals where the risks may be much lower, a simpler application process would apply. The level of risk is assessed early in the investigation phase to assist with determining the level and type of information required to inform the process.

These Guidelines do not describe internal business procedures for each agency as this is the responsibility of each respective agency.

2.2 Application response times

The IDC and all agencies involved in assessing applications will work together in order to ensure applications are reviewed and assessed in a timely manner. To aid the efficiency and effectiveness of the application process all agencies will apply a twenty eight day response time from the time they receive an application, to review, provide comment and request

additional information. If further information is required the process will not proceed until the information is provided.

The IDC will also ensure that applicants are regularly updated on the progress of their application during its review.

2.3 Costs associated with the processing of applications

There are fees and charges associated with the processing of WUL and WL forms by Water Corporations.

Other authorities may have fees and charges associated with assessing an irrigation development application e.g. Local Planning permit etc. These fees and charges are

available from the relevant agency and are to be paid by the applicant. Fee schedules can be obtained by contacting the relevant agencies.

There are not fees associated with the ID Group assessment process.

2.4 Appeals process

There is a three-step appeals process in place for applicants that are not satisfied with how the guidelines have been implemented in relation to their irrigation development application. These steps include:

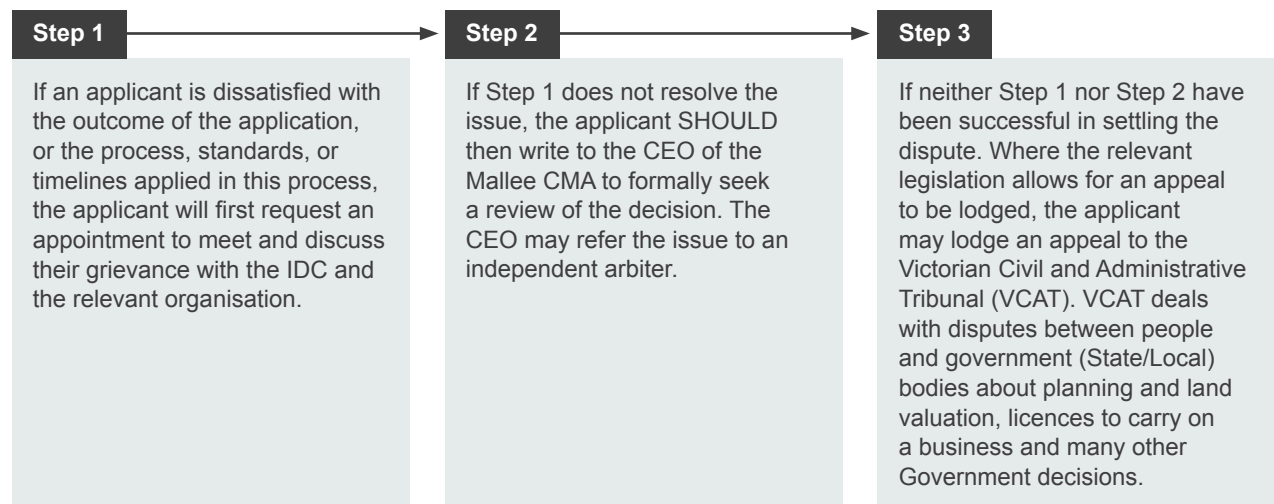


Figure 2-1 | Three step appeals process.



Young Almonds Nangiloc.

2 Irrigation development assessment process

Table 2-1 | Itemised steps for the approval process. Shading of agency/proponent box indicates organisation responsible.

Phase	Step	Agency / Proponent	Explanation of step
Investigation Phase	1	Proponent	Proponent initiates contact with agencies. Initial contact can be made by a potential applicant via a number of different avenues including Water Corporation, Mallee CMA, Local Council, Mildura Development Corporation (MDC), DJPR etc. Agencies are encouraged to refer the enquiry directly to the IDC by providing the potential applicant with the IDC contact details or forwarding their details to the IDC by email. The IDC serves as a central contact person into the ID process, ensuring consistency in the information provided and reducing the time demands on individual agencies in fielding enquiries. The IDC can guide the applicant through the process and identify the responsible agency at each step.
	2	DJPR	Initial applicant contact: Applicant is referred to Irrigation Development Coordinator (IDC). Initial discussion between applicant and IDC. IDC provides information including information regarding: Overview of the Irrigation Development (ID) approval process and Irrigation Development Application (IDA) form. The IDC will establish contact with the potential applicant to seek further information on the types of works, property location, scale of development, crop type and water requirement etc. The IDC will provide the potential applicant with further information about the general requirements involved in undertaking the ID process, potential risks that need to be considered and resources available to assist in the development of their applications. The IDC provides the potential applicant with an overview of the ID assessment process which includes the irrigation development application (IDA) form.
	3	Proponent	Proponent Completes IDA form including preliminary map. Irrigation development application (IDA) – the IDA form must be completed and signed by the landowner and returned to the IDC for the process to commence. Sometimes the initial enquiry is made by someone representing the landowner rather than the actual landowner. The landowner's consent by way of signature on the IDA form is a requirement for the application to be formally registered. On receipt, the IDC will: generate a project number; create a hard-copy project file; and commence the internal checklist to document and monitor the application progress. The preliminary map needs to be of sufficient detail for agency staff to identify location, proximity to public land, proposed pipeline routes, native vegetation and land proposed to be irrigated.
	4	DJPR	IDC consults with WC to determine if ID assessment process is triggered. (Note proponent may already have done this step, but it is important for IDC to confirm).
	5	Water Corporation	If WC determines the ID assessment process is triggered then WC advises proponent and IDC and process continues to the next step. If not, then WC deals with the proposal outside of ID co-ordinated assessment process. In Irrigation districts WC also to determine if there are any Delivery Share constraints and advise proponent of delivery infrastructure requirements. WC refers assessment of application on extraction share, water availability and any other system-scale constraints to the Water Minister or the Minister's delegate for decision regarding availability of additional extraction shares. Minister or Minister's delegate to advise proponent of delivery infrastructure requirements. Note this may be considered at step 21.
	6	DJPR	IDC organises completion of: Preliminary desktop assessment, Site visit. The investigation phase marks the start of the ID process. It commences with the formal registration of the development activity and contacting the relevant government agencies. Site visit by IDC – The IDC will coordinate a site visit with the applicant in order to determine/identify any early issues that may have a bearing on the type and level of information required to be presented by the applicant. Prior to undertaking the site visit, the IDC will undertake a desktop review of land title information, flood inundation overlays etc. The IDC will coordinate this process and seek additional specialist/expert help if required. Preliminary Hydrogeological Assessment - A preliminary hydrogeological assessment is required to determine whether the area is at risk of developing a perched water table. This preliminary assessment will determine if there is sufficient existing data available to provide the evidence and certainty to categorise the level of risk. It is a quick and inexpensive approach that can easily determine the risk of water table development and whether a more detailed hydrogeological investigation is required. However, if a high risk is identified during the preliminary assessment, or if there is not enough data available to make an assessment, then a more detailed hydrogeological investigation is required (refer Section 4.3.2). The IDC will consult with other agencies/expertise as required.
		Mallee CMA (as ID Group)	ID Group reviews: IDA form and preliminary information, site visit; Hydrogeological Risk Assessment to identify any pre-existing issues. The IDA and preliminary information collected during the site visit, and the outcome of the preliminary hydrogeological assessment, will be presented to the ID Group by the IDC either individually, during a regular meeting or one specially convened to discuss the intentions of the application. This provides an early opportunity for the ID Group to identify if there are any pre-existing or known 'showstoppers' or issues that will need to be addressed or further considered during the assessment phase. Where development activities have occurred without appropriate approvals or permits, the ID process may require the issue to be rectified/addressed before the application is progressed to the next phase of the process. In some instances, these issues may be considered to be a 'showstopper', preventing the IDA from advancing to the approval stage.
		DJPR	IDC advises proponent of cultural heritage obligations and recommends the engagement of a cultural heritage adviser.
		DELWP	IDC asks proponent to prepare initial map and refer to DELWP Planning and Approvals for PLM consent and Native Vegetation pre-plan assessment. Proponent contacts DELWP Planning and Approvals to receive preliminary advice regarding whether PV or DELWP is the public land manager (PLM) to issue PLMs consent to apply for planning permit and Landowners Consent (LOC) to occupy Crown Land. Early consultation with the DELWP Planning and Approvals Program Officer will assist in determining the type of assessments required to gain PLM consent. The type of water delivery assessments, water infrastructure installation and operation will be determined by the scope of works and how they will impact on the environment and the usability of the surrounds. In order to determine the level of environmental risk, a Siting and Design (Refer to Development Information Package), or Site Environmental Management Plan (Refer to Mallee CMA website) must be submitted to DELWP. Where removal of native vegetation is proposed, preliminary advice will be provided regarding this.
		Parks Victoria	Public Land Manager provides preliminary advice to DELWP.
	7	DJPR	Feedback from authorities/ agencies is fed back to IDC who organises a meeting with ID Group.
		DJPR	IDC undertakes a preliminary assessment and determines information and approvals required.

Continued...

Table 2-1 | Itemised steps for the approval process. Shading of agency/proponent box indicates organisation responsible. *Continued...*

Phase	Step	Agency / Proponent	Explanation of step
Investigation Phase	7	DJPR	<p>IDC provides the applicant with a letter outlining information requirements and detailed information package: Water Infrastructure (Works Licence) Assessment; and/or Water Use Licence/Irrigation and Drainage Plan (IDP) Assessment.</p> <p>Preliminary information requirements - The IDC uses the feedback provided by the ID Group meeting and incorporates this in a 'letter of advice' to the applicant. The letter provides an early indication of the type and level of assessment that will need to be undertaken during the Assessment process. The letter provides the applicant with the opportunity to assess the level of effort and expense associated with proceeding with the irrigation development application before any expense has been incurred. This is an appropriate time to remind the applicant of "due process" and that any undertaking of development activities outside of this process is not advised and is done at their own risk/expense, including any rework required to align with the required conditions.</p> <p>It is important to note that additional information may be identified as the process progresses and as a result of more detailed assessments. The full extent of the information required by the application may not always be evident at the outset of the process. Throughout the process the onus is on the applicant to engage suitably qualified experts to undertake the necessary assessments and collate the information needed to determine to address potential environmental risks associated with the development. It is equally important to provide the evidence required to demonstrate that the development will not pose any environmental risks both on-site and off-site. This information is compiled into plans that describe the means by which all impacts will be mitigated and demonstrate compliance with the Guidelines and Ministerial Determinations. This will include technical reports from various fields of expertise, depending on the scope of works proposed e.g. geophysical surveys, monitoring equipment, engineering reports etc. A Development Information Package, including factsheets relevant to the development is provided to the applicant. Often large-scale greenfield (dryland) developments require approvals for both water use activities as well as pump and pipeline activities. Detailed plans are required to be developed and endorsed in order for the relevant licences to be granted.</p> <p>It is important for the applicant to fully understand the information requirements from the outset to prepare for and/or reduce the costs associated with undertaking these assessments. It must be made clear that technical assessments required for PLM consent will inform the Works Plan and the Works Plan must demonstrate how the risks associated with construction and ongoing operation of the infrastructure will be mitigated. It is important to explain to the proponent the sequencing of these approvals and described below.</p> <p>Water delivery activities: Water Infrastructure (works licence). Before any pump and pipeline works can commence a number of authorisations must be obtained; including, in order:</p> <ol style="list-style-type: none"> 1. Landowners' consent to occupy the land which is likely to include PLM consent for works on Crown Land along waterways as well as private landowners for any proposed pipeline routes. Usually a Cultural Heritage Management Plan / permit and a native vegetation assessment and offset plan is also required across the whole of the development for obtaining PLM consent. 2. Planning permit from Local Council to use the land both for construction purposes as well as ongoing operation and maintenance. 3. A works licence from the Water Corporation to construct and use the water infrastructure. Types of works requiring a works licence include: the construction of new infrastructure; The alteration of existing infrastructure including upgrades and modifications where there is a change and/or increase in the construction footprint previously approved; and Decommissioning of old infrastructure. A works licence is a pre-requisite for the approval of a WUL. Because of this, it is advised that assessments and approvals associated with the construction of water infrastructure and works licences are undertaken first as this may determine if the development is able to proceed. No works are allowed to commence prior to PLM consent, planning permission or works licences have been obtained. This also applies to the storage of construction materials in the construction area. <p>Water use activities: Irrigation Drainage Plan (IDP for a WUL). Before water is able to be delivered to the property a WUL associated with the land parcel must be approved by the Water Corporation. In accordance with s64N of the Water Act 1989, this will not be granted "if there are no works or systems in place or likely to be installed in the near future for delivering water to the land". And under s69 of the Act, regarding applications for works licences, "the Minister [or the Minister's delegate] must defer consideration of the application pending the determination of any related application" for a WUL or a T&UL. Applicants are therefore strongly encouraged to commence the necessary approvals processes for a works licence to ensure works like pump and/or pipeline installations can be completed before commencing any water use activities on the property. Any works undertaken before the WUL is approved is not recommended and is at the risk of the applicant/ landowner. The information requirements for an IDP may include:</p> <ul style="list-style-type: none"> - Soil survey; independently reviewed by the DJPR Soils Advisor. This includes an onsite inspection of soil pits and review of the completed soil survey maps - Irrigation design - Surface and sub-surface drainage design - Hydrogeological investigation - Protection of biodiversity. <p>As part of the assessment process the soils advisor together with the soil surveyor, irrigation designer and hydrogeologist will review the following: soil survey information, irrigation and drainage designs, and hydrogeological assessment. This review will assist in identifying areas at risk of developing perched water tables, lateral movement of irrigation drainage, and surface pooling that may affect crop productivity and/or the health of native vegetation. This group will recommend; changes to irrigation and drainage designs to align with best practice, where to locate shallow groundwater table monitoring bores, where required and nominate a monitoring frequency for early detection of rising ground water tables. Additional recommendations may be made about soil amelioration or intersecting surface drainage to protect environmental values including stands of native vegetation. The water use assessments will be used to inform the development of an irrigation and drainage plan (IDP) providing the evidence to demonstrate how the risks associated with the farm activities will be minimised.</p> <p>The applicant needs to be aware that other assessments and approvals or permits/ licences may be required for various aspects of the irrigation development activity. Examples of these may include but are not limited to: Cultural Heritage assessment and approvals, NSW Government regulations for water supply infrastructure on the Murray River which often requires sign-off from Maritime Services and Fisheries, Planning Permits managed by local councils for native vegetation removal (including lopping) and works on the Murray River (generally Public Conservation and Resource Zone). It is not easy to generalise about when planning permits are or are not required. This will differ between municipalities and will depend on the land in question and the activity proposed. Each zone, overlay and particular provision will require different information to be submitted with a planning application. Prospective developers having identified a parcel of land should in the first instance contact the local planning department or ask the IDC about specific requirements.</p> <p>It is the applicant's responsibility to ensure all other approval requirements are addressed. These approvals are required to be included in the package of information presented to the ID Group and may be considered during the process of endorsement by the ID Group.</p>
	8	Proponent	Proponent collates requested information to prepare IDP and Works Plan.

Continued...

2 Irrigation development assessment process

Table 2-1 | Itemised steps for the approval process. Shading of agency/proponent box indicates organisation responsible. *Continued...*

Phase	Step	Agency / Proponent	Explanation of step
Assessment Phase	9	Proponent	Proponent completes Draft IDP and provides to IDC to distribute to relevant agencies.
		Proponent	Proponent completes Draft Works Plan and provides to the IDC to distribute to relevant agencies.
		Proponent	Proponent contacts local government for information needed for a planning permit.
	10	Water Corporation	Water Corporation checks designs are completed by suitable qualified and experienced designers.
		Mallee CMA	Checks hydrogeology is completed by suitable qualified and experienced person – depending on risk.
		DELWP & PV	DELWP Checks: Native vegetation investigation and offset plan, biodiversity buffers and Public Land Manager / Landowner consent. The Works Plan must demonstrate how the risks associated with construction and ongoing operation of the infrastructure will be mitigated.
		Other	Relevant authorities check - overarching approvals related to property developments. Other assessments required and checked: - Cultural Heritage and Native Title - Cultural Heritage Management Plan or Cultural Heritage permit. Other environmental legislation (<i>Environment Effects Act</i> , <i>Environment Protection and Biodiversity Conservation Act</i> and <i>Flora and Fauna Guarantee Act</i> (impacts on protected flora). <i>Parks Victoria Act</i> . Power. Road crossings. River Murray and NSW.
		Local Government	Local Government advises planning permit requirements.
		DJPR	Review irrigation survey design and investigations with DJPR Soil Surveyor, Irrigation Designer and Hydrogeologist.
	11	Proponent	Develops Revised Works Plan (WP), which is lodged by the applicant with the IDC.
		Proponent	Develops Revised Irrigation and Drainage Plan (IDP), which is lodged by the applicant to the IDC.
	12	DJPR	Revised IDP is circulated to ID Group for Review and consideration against Ministerial Objectives and Guidelines.
		Mallee CMA (As ID Group)	ID Group: IDC and ID Group review revised IDP and provide feedback if necessary e.g. Buffers; Groundwater monitoring; bore locations; biodiversity protection areas etc. Once the assessment phase has been completed, the water delivery and water use technical assessments and related information are finalised in a Works Plan (WP) and/or an Irrigation and Drainage Plan (IDP). These 'Plans' are submitted by the applicant to the IDC and then circulated to the ID Group for endorsement. Endorsement by the ID Group is required before a licence can be issued by the Water Corporation. The process for reviewing these Plans is outlined below: 1. The WP and/or IDP is submitted by the applicant to the IDC and then circulated to the ID Group for review 2. The ID Group will review the information presented in the WP and/or IDP to determine if there is adequate information that clearly describes the risks at the site, as well as the impacts on other water users. The assessments should also demonstrate that the planned development and future operations have been suitably designed to address any risks and adequately protect and preserve the environment. This includes other assessments and approvals that may be required from other government agencies e.g. Cultural Heritage; NSW Government; Local Government etc. or other permits/approvals as required e.g. power, hydrogeological plans etc. 3. If the level of information is not sufficient or further information is requested by the ID Group, the IDC will write to the applicant listing any missing or additional information requirements. 4. If the risks identified by the assessments are deemed too great and therefore are not supported by the ID Group, the IDC will write to the applicant detailing why the application has not been endorsed.
	13	DJPR	IDC provides the applicant with a letter outlining further information requirements identified by ID Group and asks the applicant to re-submit the WP and/or the IDP with the additional information or endorses the WP and/or IDP.
	14	Proponent	Proponent responds to other agencies information requirements and amendments and obtains necessary consents and approvals (eg CHMP).
	15	Other	Overarching approval processes related to property developments all in place. Other assessments are submitted: - Cultural Heritage and Native Title - Cultural Heritage Management Plan or Cultural Heritage Permit. <i>Flora and Fauna Guarantee Act</i> permit for protected flora. Planning Permit for works and/or removal of native vegetation. <i>Parks Victoria Act</i> . Power. Road crossings. River Murray and NSW.
		DELWP & PV	PLM assesses application for consent to apply for a Planning permit. Once DELWP & PV are satisfied that all risks have been adequately addressed by the applicant, PLM consent to occupy the land is issued and the applicant has three months to apply for a Planning Permit from local council to use the land for construction purposes. On receipt of a Planning Permit the applicant may then apply for a works licence from the Water Corporation.
		Proponent	Proponent obtains necessary approvals for checking and submits to IDC.
		Local Government	Local Government planning permit requirements are assessed and considered for approval.
	16	DJPR	When the ID Group is satisfied that the information meets requirement the application can proceed to the Water Corporation licence issuing phase. When the additional information has been provided by the applicant, and the ID Group is satisfied that the information provided meets requirements, the ID Group endorses the application (with or without recommend site specific conditions) and notifies the decision maker (Water Corporation) who is responsible for the licensing and issuing phase.
		DJPR	IDC checks that all required information has been provided by the applicant.

Continued...

Table 2-1 | Itemised steps for the approval process. Shading of agency/proponent box indicates organisation responsible. *Continued...*

Phase	Step	Agency / Proponent	Explanation of step
Licencing Phase	17	Mallee CMA (As ID Group)	<p>ID Group: Endorsement of FINAL IDP and recommendation on site specific conditions.</p> <p>The Water Corporations in consultation with the ID Group determine any site specific conditions that are appropriate for each works licence or water use licence based on the information provided by the applicant and as a result of the investigation and assessment phase. The site specific conditions set out the specific parameters within which the applicant must operate when irrigating under the works licence and /or WUL. At times the ID Group may seek expert advice external to the ID Group in order to formulate suitable recommendations for licence conditions.</p> <p>Works Licence Conditions.</p> <p>Works licences to construct, operate, alter, decommission or remove works associated with the extraction of water (i.e. bores, pumps and dams) are subject to conditions set by the Minister and are specified on the licence (Refer to Appendix 1 7.3.5 – Policies for Managing Works Licences). These conditions must be consistent with and refer to the contents of the works plan, management plan, dam safety surveillance plan, dam safety emergency management plan or other relevant (and referenced) document.</p> <p>The conditions on a works licence will address:</p> <ul style="list-style-type: none"> ▪ The scope of works covered under the licence ▪ The responsible entity for the licence ▪ The terms and conditions of the licence ▪ Considerations for licence renewals and amendments ▪ Specification around extraction limits ▪ Water meter installation and use ▪ Site specific information (such as management plans). <p>Water Register standard conditions are provided in Appendix 4. This should provide guidance to the IDC and ID Group on what can be recommended.</p> <p>Water Use Licence Conditions.</p> <p>Standard and site specific conditions for the WUL may be applied to a WUL to meet the Ministerial Water Use Objectives that are consistent with, and in reference to, the contents of the IDP.</p> <p>The Standard Conditions on a WUL will address:</p> <ul style="list-style-type: none"> ▪ Managing groundwater infiltration – required metering of water delivery to the specified area of land under licence ▪ Managing disposal of drainage - surface and subsurface drainage strategy within the property boundary ▪ Minimising salinity - irrigation design and irrigation water salinity concentration that meets the soil characteristics; salinity offset charges required to mitigate the River impacts caused by irrigating the specified area of land; and ▪ Protecting biodiversity – installing, maintaining and monitoring groundwater bores including reporting requirements to observe any impact of the irrigation activity on native vegetation, the habitat of native animals or wetlands as well as corrective actions where there is a breach. <p>Site specific or special conditions include: The annual water use limit (AUL) for any season; and requirements that govern the use of ponded irrigation. For more information, refer to Standard Water Use Conditions. The Victorian Water Register (VWR) has been set up so that water corporations can select suitable conditions from dropdown menus, when they are issuing, renewing, or varying licences under the <i>Water Act 1989</i>. The aim in building this functionality into the register was to help ensure that conditions were written in consistent, enforceable language that was drawn from Ministerial policies and determinations. The full range of possible conditions available in the water register is reproduced in the Appendices 5 and 6. The Appendices show that parts of the text in these condition sets are editable. This provides scope to translate ID Group recommendations into particular conditions on licences.</p>
	18	DJPR	<p>IDC provides: the applicant with a letter (copy to Water Corporation) with notification that the application is endorsed subject to any recommended site specific conditions (using standard VWR conditions wherever possible).</p>
	19	Proponent	<p>Proponent has in place all necessary endorsements and consents subject to specified conditions.</p>
	20	Proponent	<p>Applicant to download from the VWR.</p> <ul style="list-style-type: none"> ▪ Form 29 "Issue of a Works Licence" or Form 31 "Variation to Existing Licence" and lodge completed form with Water Corporation together with the FINAL WP; Planning Permit; any/all other required ▪ Form 23 "Water Use Licences"; Form 29 "Issue of a Works Licence" or Form 31 "Variation to Existing Licence" and lodge completed form with Water Corporation together with the Final WP; Planning Permit; any/all other required. <p>When the WP and/or IDP are complete, the proponent is required to formally lodge an application form with the Water Corporation. This information is used by the Water Corporation to officially register and approve all water use licence and works licence information, including conditions, in the Victorian Water Register. The Water Corporation notifies the IDC via email when the application has been approved, and supplies the licence numbers as recorded in the VWR. The IDC completes the checklist for the IDA and closes the project file.</p>
	21	Water Corporation	<p>Minister or Minister's delegate issues a works licence and water use licence when all necessary assessments and approvals are obtained, subject to Minister / Minister's delegate consideration of extraction share flagged at step 5. Water Corporation notifies the IDC when the licence has been issued, and supplies the license number as recorded in the VWR. The IDC completes the checklist for the IDA and closes the project file.</p>

2 Irrigation development assessment process

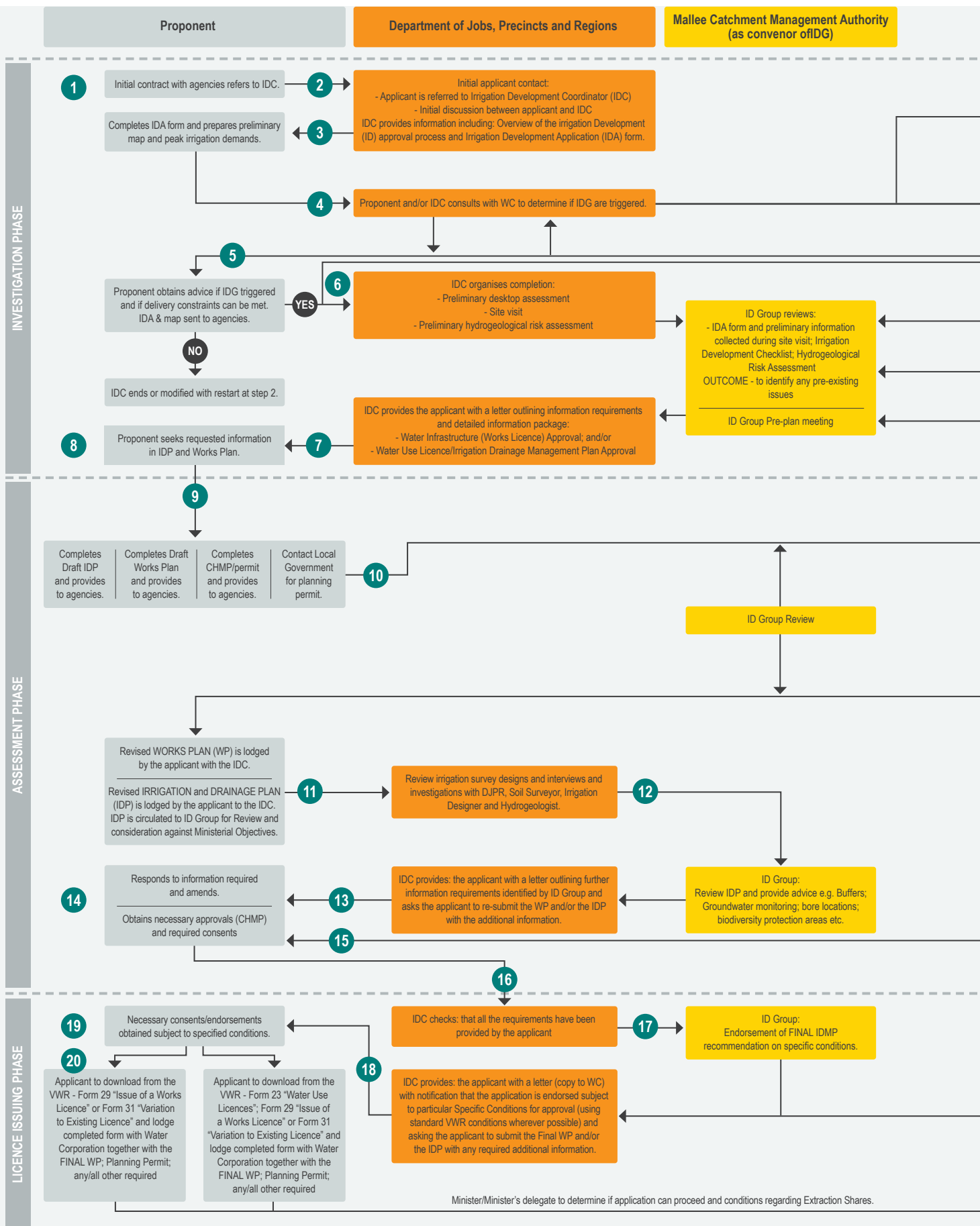


Figure 2-1 | Mallee Irrigation Development Assessment Process.

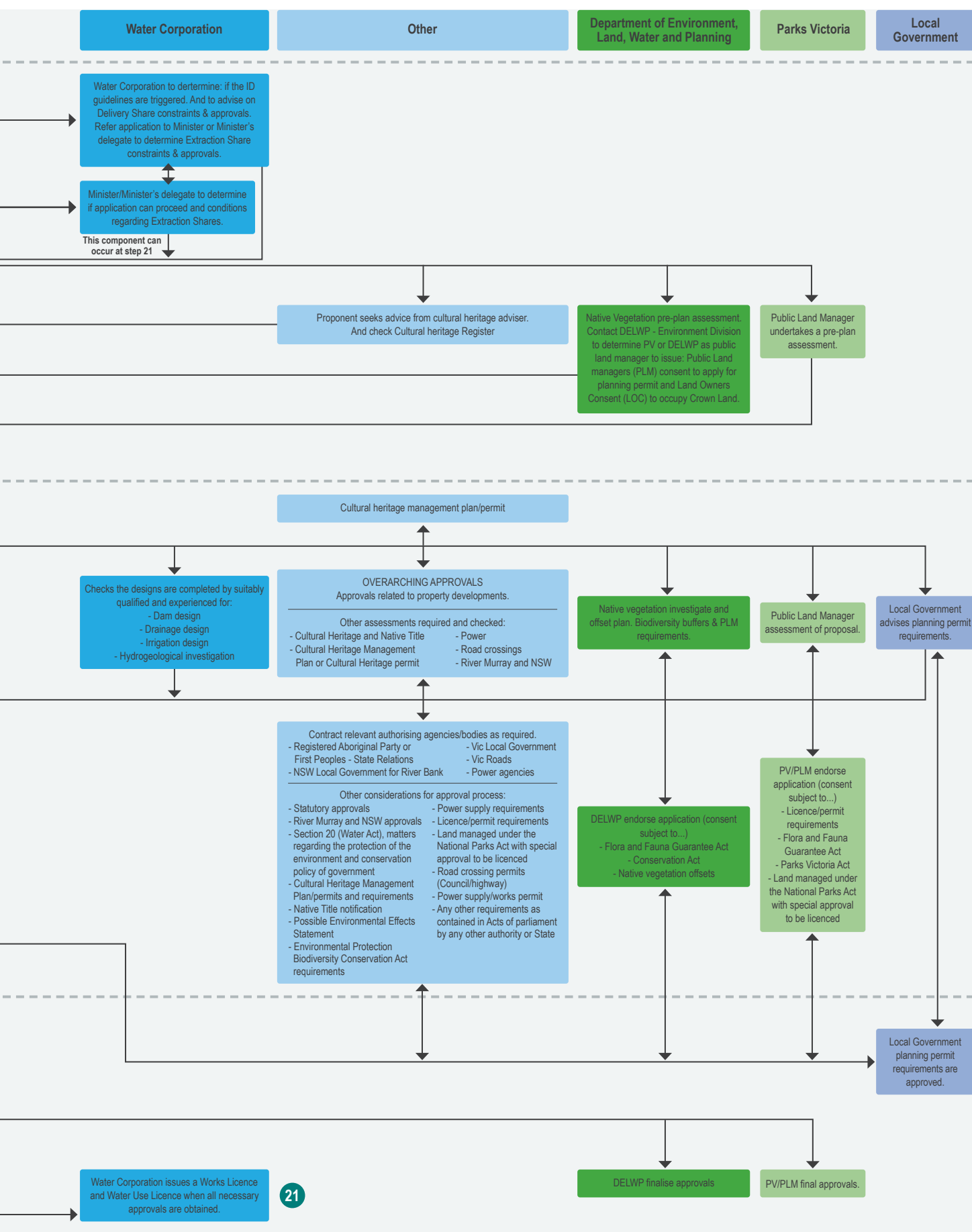


Figure 2-1 | Mallee Irrigation Development Assessment Process. *Continued...*

3 Roles and Responsibilities

Understanding the role of agencies and proponents is critical to the assessment process.

3.1 The applicant

The onus is on the applicant to provide the evidence that demonstrates: the impacts of the proposed development on the environment, the means by which any impacts are to be mitigated, and compliance with Ministerial Objectives and these Guidelines. The applicant:

- Is defined in these Guidelines as the owner of the land on which the proposed development is to occur and to whom the licence is granted, or a person/s who has been authorised by the landowner to undertake the development on the owner's behalf
- Completes and forwards all necessary documentation in relation to the proposed development as outlined in the Development Information Package

- Ensures compliance with all relevant legislation such as the *Aboriginal Heritage Act 2006*, *Planning and Environment Act 1987*, *Environment Protection and Biodiversity Conservation Act 1999*, *Flora and Fauna Guarantee Act 1988* and *Wildlife Act 1975* are complied with.

There are various fees and charges associated with the processing of forms by the Water Corporations and other government agencies. These fees and charges are available from the relevant organisations and are to be paid by the applicant.



Lemon Harvest.

3.2 Irrigation Development Group

Inter-agency co-operation is an integral part and requirement of the irrigation development application assessment process. The ID Group provides a forum to co-ordinate, collaborate, evaluate and work through complex irrigation development proposals.

The ID Group:

- Provides guidance and advice to the Mallee IDC in regard to irrigation development matters
- Provides agency support and advice on the aspects of the Mallee irrigation development approval process to ensure regional compliance with the *Water Act 1989*
- Assists irrigation developers and participating agencies to adhere to the Victorian Mallee irrigation development assessment process as documented in these guidelines
- Ensures irrigation development applications are processed in a timely manner and cost-effectively
- Endorses IDPs as part of the advice process to Water Corporations
- Provides advice to Water Corporations in formulating conditions on WUL, works licences and T&UL
- Ensures the statutory requirements for each agency within the ID Group are fully considered and addressed, and provides advice and guidance to the Mallee CMA on any reviews of these guidelines

with the aim of keeping the document up to date with current legislative requirements and government policies and strategies.

The ID Group is coordinated by the IDC and meets monthly, or as required to address issues that arise. The ID Group is made up of a number of key government agencies for which there is a core working group comprised of:

- IDC (DJPR)
- Water Corporations (LMW, GMW, GWMW)
- Planning and Approvals (DELWP)
- Soils Advisor (DJPR)
- Salinity and Irrigation (Mallee CMA).

At times the ID Group may need to consult further with the following government agencies:

- Parks Victoria
- DELWP Water and Catchments
- First Peoples - State Relations
- DELWP Natural Environment Program
- DELWP Public Land Administration.

These agencies may attend meetings less frequently or on an as needed basis.

3.3 Irrigation Development Coordinator (IDC)

The IDC plays a crucial role in the implementation of the guidelines. This includes:

- Providing private landowners and referral authorities with a preliminary assessment of potential environmental issues and offsite impacts of water use and irrigation of the proposed development through the irrigation development process
- Collecting and recording data associated with irrigation developments in accordance with agreed standards as documented in the ID Group Terms of Reference (See Section 8)
- Providing a single point of contact for all Mallee irrigation development related matters for applicants and partner agencies
- Providing advice to partner organisations on whether the guidelines are being adhered to by applicants and partner agencies
- Ensuring applicants are guided through the irrigation development assessment process as per these Guidelines in a timely manner
- Convening and chairing the inter-agency ID Group meetings in order to ensure that all matters relevant to new irrigation development are being efficiently and effectively addressed
- Documenting discussion for each ID Group meeting as minute taker
- Tracking and reporting IDA progress to the ID Group and applicant by maintaining the ID Checklist (See Development Information Packages).

3.4 Water Corporations

The Minister for Water or the Minister's delegates are responsible for the issue of WULs, works licences and T&ULs in accordance with the Victorian *Water Act 1989* and associated Ministerial Determinations. A Water Corporation may not approve the issue of a works licence, WUL and or the T&UL to new developments unless the statutory requirements of the Water Corporations, and other stakeholder organisations, have been documented, evaluated and approved. Agencies and authorities with statutory responsibility have agreed to work with the water corporations in applying these Guidelines.

In issuing relevant licences, the regulatory authority must:

- Be satisfied with the standard of the IDP and/or WP accompanying the application
- Assess applications against, and enforce compliance with, the standard water use conditions as outlined in the Ministerial Determinations; the Water Corporations consider in granting a WUL whether or not the proposed use of water is consistent with the Water Use Objectives
- Follow the requirements outlined under the 'Policies for Managing Take and Use Licences' and the 'Policies for Managing WULs in Salinity Impact Zones' (Appendix 1) when issuing a T&UL, and a WUL
- Consult with the Minister or Minister's delegate in determining if extraction share is available to service the proposed development
- Notify the applicant of the requirement to pay Salinity Impact Charges in line with the Minister's Determination of Salinity Impact Zones and Salinity Impact Charges.
- Formulate suitable conditions for the works licence or WUL after consultation with the required agencies: Mallee CMA, DELWP, DJPR Soils Advisor, Parks Victoria and other agencies as required. Suitable conditions will be discussed and specified by the ID Group meeting. The standard conditions are included as conditions on all licences. Site specific conditions identified during the assessment process should be included on the licence as a recommendation of the ID Group.
- Notify IDG that license has been issued, along with WUL/WL number as recorded in the Victorian Water Register.

3.5 Department Of Environment, Land, Water and Planning (DELWP)

3.5.1 Planning and Approvals

DELWP – Planning & Approvals (P&A) is a referral authority for advising Local Government on native vegetation and Crown Land issues through the planning permit application process. DELWP P&A seeks advice from DELWP Natural Environment Program in assessing impacts on biodiversity including native vegetation removal, and buffers.

They are responsible for issuing public land manager's consent to allow applicants to apply for a planning permit. They have a role in identifying the appropriate public land manager (PV or DELWP) and coordinating a joint response to proponents on behalf of PV and DELWP as public land managers.

The DELWP Planning and Approvals can:

- Assess and if appropriate, provide public land manager consent to apply for a planning permit and works licences on Public Land as delegate of the landowner
- In consultation with DELWP Natural Environment Programs, provide advice on any relevant biodiversity impacts, protection arrangements and native vegetation offset requirements (Should removal of native vegetation be permitted)
- DELWP Planning and Approvals may refuse consent to works on Crown Land or may object to planning permits.

3.5.2 Water and Catchments Group

DELWP – Water and Catchments Group:

- Provides high level policy advice to the Mallee CMA and other agencies on the preparation and endorsement of the Guidelines through the Irrigation Development Guidelines Advisory Note
- Provides an oversight role and funding to support implementation of the guidelines to support DJPR in the undertaking of the IDC role
- Provides specialist assistance, advice and guidance on water availability and system-scale constraints
- Is a signatory to the authorisation of a works licence
- Provides advice and interpretation of Ministerial policies and administrative requirements.

3.6 Department Of Jobs, Precincts and Regions (DJPR)

The DJPR Soils Advisor provides advice to the Water Corporations on the technical aspect of IDPs, including:

- Reviews independent soil survey results from applicants. This includes an onsite inspection of soil pits and review of the completed soil survey maps. As part of the assessment process the DJPR Soils Advisor may make environmental-based recommendations mainly concerning drainage issues and the placement of shallow groundwater monitoring sites to detect any potential lateral movement of irrigation drainage from the site and/or detection of perched water tables that may threaten remnant native vegetation.
- Provides, where relevant, information on irrigation best management practices and soil amelioration strategies.

3.7 Mallee Catchment Management Authority (CMA)

- Is the lead agency for ensuring the Guidelines are up to date with current legislation and are consistent with the RCS and the LWMP as well as any other government policy directive
- Provides advice to the Mallee CMA Board, DELWP and MDBA on the annual salinity debits incurred from irrigation development activities
- Enacts appropriate approvals processes to ensure adequate salinity credits are available to support existing irrigation areas and to support sustainable irrigation expansion
- Is a referral authority for advising agencies, Local Government and individuals on rivers, wetlands and floodplain issues and matters, particularly as part of the planning permit approval process undertaken by statutory authorities.

3.8 Local Government

- Assesses planning permit applications relating to land development, drainage, flooding, native vegetation, waterways, cultural heritage and earthworks, issues planning permits and where relevant.
- Enforces compliance of planning permit conditions
- Is responsible for the application of the Victorian Planning Provisions locally.

3.9 Parks Victoria

Parks Victoria:

- Under the *Parks Victoria Act 2018*, Parks Victoria has primary responsibility for the protection, conservation, and enhancement of Parks Victoria managed land
- Is a land manager of Crown Land administered under the *National Parks Act 1975* and the *Crown Land Reserves Act 1978*
- All applications to locate irrigation infrastructure on Parks Victoria managed land must be submitted using the *Parks Victoria Application Form 2. Pumping Infrastructure and Associated Works Assessment Sheet.*
- Is responsible for the issue of Section 27 consent, under the *National Parks Act 1975*
- Operates under *Parks Victoria Act 2018*.

3.10 Registered Aboriginal Parties and First Peoples - State Relations (FPSR)

Cultural Heritage Management Approvals must be in place before any other approval process can be completed. As discussed in more detail in Section 5.2, this typically takes the form of a cultural heritage management plan (CHMP). A Registered Aboriginal Party (RAP) may elect to approve a CHMP. Where the RAP declines to do so, or where there is no appointed RAP, then the DELWP Secretary (that is, First Peoples - State Relations) will assess an application for approval of a CHMP.

As of June 2019, there are two Registered Aboriginal Parties (RAP) relevant to these guidelines. Within the RAP boundaries the relevant RAP provides advice to the ID Group on cultural heritage matters. Outside of RAP boundaries AV provides advice. Appendix 1 - Figure 7 2 and Figure 7 3 show maps of the RAP areas.

First People of the Millewa-Mallee Aboriginal Corporation (FPMAC) are Latji Latji, Nyeri Nyeri and Ngintait (Nintay) Traditional Owners of Country in the north west of Victoria that runs south of the Murray River to the Mallee Highway, and west from the Calder Highway to the South Australian border, including the Murray Sunset National Park.

The Barengi Gadjin Land Council Aboriginal Corporation in the southern Mallee is the RAP for an area that encompasses part of the Murrayville Groundwater Management Area.



Crop inspection, Vineyard Mildura.

4 Information requirements and technical assessments

Public Land manager consent and plans are critical to the process.

4.1 Public Land Manager consent

Privately owned river pumps and associated infrastructure are commonly located within the Public Conservation and Resource Zone and Public Park and Recreation Zone along the length of the Murray River. In order to construct, alter, operate, remove or decommission any works from Victorian water systems, consent from the public land manager is required first and before an application is made for a planning permit or a works licence.

For further details on the information requirements refer to the Standards for Site Environmental Management Plans (Refer to Mallee CMA website: <http://www.malleecma.vic.gov.au/>) and Parks Victoria *Guidelines for Infrastructure and Works on or across Parks Victoria Owned/Managed Land*.

4.2 Works Plan to inform the Works Licence

The purpose of a Works Plan is to protect the aesthetic, archaeological, cultural and conservation values of the riverine and riparian environment and public land areas. Pumps, pump houses, pipelines, access tracks and associated water diversion works must meet the standards necessary to minimise their impacts on other persons and the environment. This must involve an assessment of local conditions and the appropriate siting, construction, operation, and maintenance of water diversion works.

The works licence for private diverters also employs strategies to minimise impacts on other water users by placing limitations on an extraction share and extraction rates during periods of rationing or other restriction, required to be specified as part of the works plan. Parks Victoria's policy is that Crown Land access should only occur if there are no other existing water supply options. Sometimes there are existing water supply channels that Parks Victoria would prefer to be used first. Parks Victoria also may suggest alternative supply routes to minimise impacts to park values.

- All permanent pipelines must be underground, and Parks Victoria must be advised whether the proposal is for the pipeline to be buried in a trench or under-bored

- No overhead powerlines are allowed
- Proponents must advise Parks Victoria how they plan to meet the pump shed, and access track, requirements and how they plan to minimise any impacts on natural values
- Proponents must also outline their basic rehabilitation plan once construction is complete.

A Works Plan (WP) must clearly describe the type and location of irrigation infrastructure required to be constructed to extract water from the River and the intended pathway to deliver it to the farm. A WP must include:

- Siting map of proposed works
- Construction plan
- Decommissioning Plan
- Operation Plan.

Consideration must be given to what mechanisms will be undertaken to meet the standards necessary and to minimise the impacts on other persons and the environment during construction as well as ongoing operation of the water delivery infrastructure into the future. For further details on the information requirements refer to <https://www.water.vic.gov.au/managing-dams-and-water-emergencies/dams/guidance-notes>².

² Accessed 12/9/19

4.3 Irrigation and Drainage Plan that informs the Water Use Licence

Under the Ministerial Determination (2007) Schedule 1 of the Standard Water Use Conditions an application for a new or varied WUL must be accompanied by an IDP for the area of land being developed or expanded³. The IDP must provide the information necessary to demonstrate how the development meets the necessary standards to minimise the impacts of water use on other persons and the environment (in particular water logging, salinity and nutrient impacts). The IDP must involve an assessment of local conditions and appropriate design of irrigation systems. The key purpose of an irrigation and drainage plan is to match the way land is irrigated and drainage disposed of, with the characteristics of the land and soil, in order to efficiently meet the objective of minimising harmful side-effects of irrigation.

The IDP must include:

- A map of the proposed development clearly identifying the irrigation footprint
- Topographical survey
- Soil survey report and maps
- Irrigation design and management
- Arrangements for drainage disposal
- Biodiversity protection arrangements.

For the new or varied water use licence to be granted, the irrigation and drainage plan must be endorsed by the ID Group and a reference to the IDP, including the polygon approved for irrigation, recorded as part of the water use licence.

4.3.1 Assessments that inform the Irrigation and Drainage Plan

A. Soil survey assessment

A soil survey is undertaken to provide information to assist the irrigation designer in proposing an irrigation system capable of applying accurate irrigation volumes to match the volume of readily available water that can be held in the soil. This helps to maximise productivity whilst minimising the risk of off-site impacts.

Information required for the area proposed to be irrigated is provided by a suitably qualified soil surveyor on an overlay of a map of the property and soil data sheets, and includes physical and chemical soil characteristics. Spacing for the soil sampling is undertaken on a 75 by 75 metre grid however broader spacing may apply for less intensive agriculture after a risk assessment demonstrating that this is justified.

The soil survey information is provided in a written report that includes:

- Clear property identification/identifiers (Crown Allotment etc.)
- Description of topography, hydrogeology and previous land use
- Key aspects of climate
- Soil profile descriptions
- Factors affecting potential root-zone depth
- Soil/water interactions e.g. drainage, permeability, infiltration
- Readily available water
- At least 10% of the pits are to be characterised for soil chemistry (including EC, pH and Boron)
- Land capability
- Amelioration recommendations.

An overlay of soils grouped into similar irrigation management units is also required.

A DJPR soils advisor undertakes an independent assessment of all irrigation development soil surveys conducted in the region; this includes an onsite inspection of soil pits and review of the completed soil survey maps. As part of the assessment process the soils advisor together with the soil surveyor, irrigation designer and hydrogeologist, will review the soil survey information and identify areas at risk of developing: perched water tables, lateral movement of irrigation drainage, and surface pooling that may affect crop productivity and/or the health of native vegetation. This group will recommend where shallow groundwater table monitoring bores should be located and nominate a monitoring frequency for early detection of groundwater table build-up.

These recommendations will in part be based on the recorded depth to water-impeding layers, including depth to clay and/or hardpans which may be a potential risk. The preliminary assessment will be considered to ensure groundwater monitoring bores are installed in areas that will assist in early detection of water table development before impact upon native vegetation. Additional recommendations may be made about soil amelioration or intersecting surface drainage to protect environmental values including stands of native vegetation. The recommendations are forwarded to the ID Group in an assessment report. The IDC will include the recommendations (in whole or part) as conditions on the WUL.

³ https://waterregister.vic.gov.au/images/documents/consolidated_standard_water_use_conditions.pdf (Accessed 2/10/19)



Soil pits.

B. Irrigation design

The irrigation design must be completed by a certified irrigation designer to the certification body's standards and provide information on anticipated crop water requirements and proposed maximum application rates, irrigation system specifications, and a map identifying delivery supply point and the area to be irrigated. Irrigation design will need to consider buffer requirements from retained native vegetation (refer Figure 4 2).

The general principle in the design is that the irrigation system should be capable of applying an irrigation depth equivalent to or less than the readily available water of the soil, appropriate to the crop. Areas of similar readily available water are to be grouped as irrigation management units and supplied separately, based on the results of the soil survey.

Flood and furrow irrigation should not occur where the calculated minimum depth that can be applied (taking into account infiltration rates, slopes, length of irrigation runs and discharge rate) exceeds the readily available water within the estimated crop root-zone.

C. Management and monitoring of irrigation

Performance standards for irrigation management, monitoring and reporting is included as part of the IDP. These standards provide managers of the irrigation system and regulators with information that allows

routine assessment of the volume of water passing the root zone. It is this water that passes the root zone that creates the pressure head in the groundwater, and hence the salinity impacts in the River and surrounding low-lying areas.

A plan for monitoring groundwater levels and quality may be required as part of the IDP. The proponent is responsible for implementing the monitoring plan and reporting results to the relevant Water Corporation. If these requirements are adequately translated into conditions on the WUL a graduated enforcement process is available under the *Water Act 1989 Section 64 AF*. That process can ultimately lead to WUL revocation in the event of repeated failure to comply with conditions.

Shallow groundwater monitoring bores may be required to monitor water tables between the proposed irrigation development and sensitive sites. Normally these will only be required if the sensitive site is downslope of the irrigation area.

Monitoring of shallow groundwater monitoring bores will provide an early indication of perched groundwater tables and the need for a drainage system to be installed.

Refer to Mallee CMA website for the guidelines for the installation and management of shallow ground water bores (Guidelines for the installation and Management of Test-wells and Piezometers).

D. Arrangements for drainage disposal

Developers are responsible for their own drainage disposal. The IDP must therefore include an appropriate contingency drainage design.

The need for a subsurface and/or surface drainage scheme and re-use system must be considered. A design is to be developed for the appropriate system, and it must include:

- Details on the volume of water to be collected
- Details of any approved on-site disposal site and/or details of any off-site disposal site
- Details of approvals for any proposed re-use schemes and/or irrigation storages
- Location of pumps, discharge or re-use points.

E. Biodiversity protection arrangements

The IDP must identify those parts of the property and adjacent land where the use of water for irrigation poses direct and ongoing risks to wetlands, native vegetation, or the habitat of native animals. Depending on the ID Group's assessment of the risks involved, this assessment may need to be done by a suitably qualified person/consultant.

For those areas, the IDP must specify mitigating measures and suitable monitoring parameters, as well as appropriate monitoring equipment and locations for the equipment to be installed. The IDP must also specify equipment maintenance standards, data reading, recording, reporting and auditing requirements, corrective action thresholds, corrective action procedures, and corrective action time limits.

Appropriate protection arrangements include buffers between irrigated areas and native vegetation.

4.3.2 Hydrogeological Assessments

The purpose of the hydrogeological assessment is to determine the likely environmental impacts caused by changes to groundwater levels in the vicinity of the development. The hydrogeological assessment is required to identify:

- The potential for irrigation to increase water levels in perched and regional groundwater systems
- Likely groundwater flow paths and rates
- The likely impact of change in water tables with regard to the impact on the river, the floodplain corridor, native vegetation, public land, neighbouring land, roads and any other built infrastructure or other beneficial use
- Areas unsuitable for irrigation, as determined by the soil survey information and potential for surface water pooling and groundwater formation
- The need for sub-surface drainage and disposal of drainage effluent which need to be considered when developing the IDP

- The level of confidence of the above assessments, based on data quality for the site
- The need for additional monitoring of the groundwater levels.

An initial hydrogeological assessment is undertaken by the IDC to determine whether the area is at risk of developing a perched water table. This will be done during the investigation phase and may determine that the site (on the whole, or in part) is unsuitable for irrigation, in which case further expense and inconvenience by the applicant is avoided.

A detailed hydrogeological investigation will not normally be required where the development is less than 50 ML in total water use, or 10 ha in size, unless a high environmental impact is identified at the proposed site. An initial assessment may not be required where previous hydrogeological investigations have been conducted over the property and these are available to the IDC.

There are several primary attributes that determine the level of risk; these include: depth to the regional water table (not to be mistaken with shallow/perched water table), degree of land slope, presence and thickness of clay and/or other restricting layers, and geographic proximity to national parks and/or conservation reserves. A preliminary assessment of the likely hydrogeological risk can be undertaken by assessing each attribute and applying a risk rating as shown in Figure 4-1 (Aquaterra, 2010).

The risk categories are defined as:

High – a high risk is assigned where the presence of high value native vegetation is present within a 500-metre proximity to a new development or where the development is adjacent to a National Park.

Medium – a medium risk is assigned where the presence of known physical attributes at a site indicate that it has a pre-disposition to perched water table development (i.e. clay layer or other restrictive layers) and there is a lack of good data and layer information available to show reduced risk (i.e. the layer is discontinuous).

Low – a low risk is assigned to a site where there is no high value native vegetation in proximity or within the boundary of the development site and/or where the pre-disposition to perched water table development is insignificant.

The assessed risk category and the nature of the application will determine the investigation's path and level of detail that will be required to gain approval:

High – must undertake a Level 1 hydrogeological investigation. The specification for this is available from the IDC.

Attribute/Parameter	Measurement	Risk Rating	Colour Indication
Depth To Regional Water Table	<5m	High	Red
	5-10m	Medium	Yellow
	>10m	Low	Green
Slope	>3%	High	Red
	1-3%	Medium	Yellow
	<1%	Low	Green
Presence of Blanchetown Clay	Presence	Moderate	Yellow
	Absence	Low	Green
Geographic Proximity to Native Reserves (500m)	Within 500m	High	Red
	Outside 500m	Low	Green
Geographic Proximity to Native Vegetation (250m)	Within 250m	High	Red
	Outside 250m	Low	Green
Thickness of Blanchetown Clay	>5m	High	Red
	0m-5m	Medium	Yellow
	0m (Absence)	Low	Green
Overall Property Rating	1 / 2 / 3	Low/Moderate/High	Green/Yellow/Red

Figure 4-1 | Hydrogeological Risk Impact Assessment Categorisation (Aquaterra, 2010)

Medium – depending on the reason for this rating, one of the following investigations must be undertaken:

1. Level 2 hydrogeological investigation – independent review and recommendations by a qualified hydrogeologist. The investigation must include on-site assessments to determine additional detail about potential groundwater processes and environmental assets at risk that is not available from existing data.
2. Level 3 hydrogeological investigation – independent opinion from a qualified hydrogeologist. This level is undertaken when the assessor has some doubt about the result of the desktop assessment. The doubt may arise from conflicting information or from a lack of data to support a clear risk categorisation.
3. Level 4 hydrogeological investigation – this level is intended to provide additional certainty that the risk is minimal. This will include a cross-check against existing monitoring bores and results/outcomes of other development assessments nearby, if publicly available.

Low – no further hydrogeological investigation is required for the application. The Water Corporation may require monitoring and the DJPR soils advisor will provide advice on where these are best located. These bores will require frequent monitoring in order to track rising water tables and provide early warning for the requirement to implement measures that protect native vegetation (e.g. drainage systems).

The information required for each level of investigation is specified in guidelines available from the IDC and broadly covers:

- The likely depth to the regional groundwater based on available records
- The location and existence of any aquifer(s) down to the basement bedrock

- The typical annual fluctuation of groundwater and piezometric levels of significant aquifers and the hydraulic head difference between aquifers
- Groundwater gradients, groundwater quality and likely variability of quality
- Location of any current or potential areas of groundwater interaction with the surface
- Location of any existing or potential areas of groundwater discharge within the vicinity of the irrigation development that may be exacerbated by irrigation development
- The likely need for sub-surface drainage, and consequent need to set aside areas within the development for sub-surface drainage disposal
- Location of groundwater monitoring bores to track changes in perches and regional groundwater levels
- The assessment generally will require consideration of a 'source–pathway–receptor' model to assess risk (EPA publication 668) in that the sources of groundwater rise are identified and the potential for this rise to cause on-site and off-site impacts on the environment and other irrigators is fully considered. The guidelines available from the IDC Aquaterra (2010) provides guidance on four different levels of investigation reflective of the level of risk.
- The investigation and/or approval process may recommend the installation of groundwater bores and a monitoring program. The collection of groundwater data should comply, as a minimum, with the Guidelines for the Installation and Management of Test-wells and Piezometers (refer to Mallee CMA website).
- The information collected during the hydrogeological assessment will assist in determining if there are any required changes to the standard vegetation buffers employed (Figure 4 2).

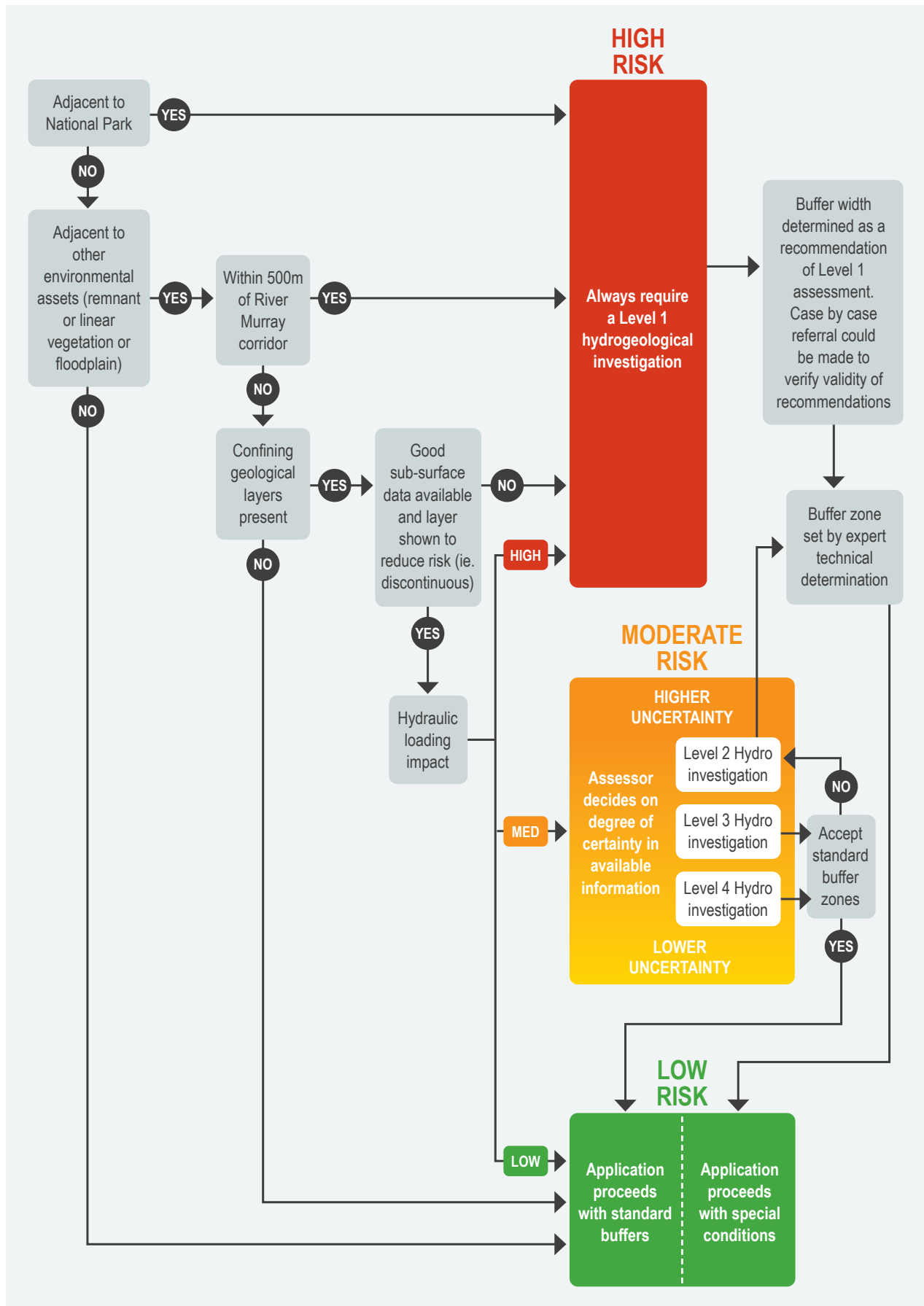


Figure 4-2 | Mallee Hydrogeological Assessment and Vegetation Buffers Framework (Aquaterra 2010)

4.3.3 Vegetation Buffers

Since the year 2000, buffers have become a standard planning tool for irrigation developments within the Mallee region; they are used as a mitigating measure for the protection of biodiversity within irrigation developments. Standard hydrogeological buffers are required between retained native vegetation and irrigated horticulture to reduce the impact on native vegetation and biodiversity values caused by groundwater movement (perched and regional) that can result from irrigation development. The adoption of buffers also reduces potential impacts from:

- Spray drift
- Encroachment and damage caused by operating machinery
- Soil erosion and surface water movement
- Weed invasion.

Buffer requirements are determined using a risk based approach depending on two main factors:

- The assessed level of hydrogeological risk a proposed irrigation development is likely to have on native vegetation
- The value and condition of the native vegetation on which the proposed irrigation development is likely to impact.

The level of risk above can only be determined through obtaining data specific to the site so in most instances conservative buffer distances are adopted as per the standards in Table 4-1. The adoption of conservative buffer distances should only be reduced where the applicant can demonstrate that biodiversity values will not be affected.

The standard buffer distances are summarised in Table 4-1.

To apply to reduce standard hydrogeological buffer widths, evidence is required to be presented by the applicant to demonstrate the impact of the development both with and without mitigating works. This can be done

by providing further evidence e.g. the development is downslope of vegetation or is not hydrogeologically connected, and may require drilling investigations or mitigating works. Any such works will need to be recommended by a qualified hydrogeologist with relevant modelling to determine likely impacts. The recommendations must be described in the IDP and included with the supporting investigations or studies. These may be independently reviewed by the licensing authority prior to approval of the final irrigation development application and conditions. A review will not be undertaken until the irrigation design has been completed as the design will influence the decision process.

Conditions on the WUL provide the vehicle for compliance for protecting against “direct and ongoing risks” to biodiversity from “the use of water for irrigation”.

4.3.4 Native vegetation considerations when applying standard hydrogeological buffers

Roadside vegetation, vegetation corridor, remnant patch within property and scattered vegetation are further defined for consistent application of buffer requirements.

Scattered vegetation is defined as:

- Scattered trees in accordance with DELWP (2017) *Guidelines for the removal, destruction or lopping of native vegetation*⁴, or
- A patch in accordance with the DELWP *Guidelines*⁵ which is small in area (<0.1 hectare).

Retained scattered vegetation must be protected with a 5m buffer measured from the drip line (outer canopy edge) of the vegetation.

Roadside vegetation, vegetation corridor, remnant patch within property are defined as:

- A patch in accordance with the DELWP *Guidelines* which is >0.1 hectare in area.

Table 4-1 | Standard vegetation buffers for irrigation developments (adapted from Aquaterra, 2010)

Environmental Asset/Value	Standard Hydrogeological Buffer
Land administered under the National Parks Act 1975 and significant reserves under the <i>Crown Land (Reserves) Act 1978</i>	200 metres
Native vegetation stand of significance (e.g. State Park, wetland etc.)	50 metres
Roadside vegetation or vegetation corridor (if buffer is un-vegetated)	50 metres
Roadside vegetation or vegetation corridor (if buffer is re-vegetated)	25 metres
Remnant patch within property (if buffer is un-vegetated)	50 metres
Remnant patch within property (if buffer is vegetated)	25 metres
Scattered vegetation (including single paddock trees) within property	5 metres

⁴ A scattered tree is a native canopy tree that does not form part of a patch

⁵ A patch of native vegetation is an area of native vegetation where at least 25% of the total perennial understory plant cover is native, or any area with three or more native canopy trees where the drip line of each tree touches the drip line of at least one other tree, forming a continuous canopy

Retained patches >0.1 hectare in size must be protected by a 25m revegetated or 50m unvegetated buffer unless the retained patch of native vegetation is assessed by an accredited native vegetation assessor, in which case the following applies:

- If the Habitat Zone is part of an Ecological Vegetation Class which is:
- Naturally treeless: it must be protected by a 25m/50m buffer
- Naturally treed and
 - a) trees and/or long lived shrubs are present: it must be protected by a 25m/50m buffer
 - b) no trees and/or long lived shrubs are present: a 5m buffer applies as for scattered vegetation.

Habitat Zones must be assessed in accordance with DSE (2004) *Vegetation Quality Assessment Manual (VQAM)*, as amended by DELWP (2018) *Assessor's Handbook*.

“Trees and/or long lived shrubs” includes canopy trees, understory trees and long-lived medium shrubs such as (such as Cattlebush *Alectryon oleifolius*, *Hakea spp.*, *Acacia oswaldii*, *Pittosporum angustifolium*, *Myoporum platycarpum*).

How is area measured?

Area is measured around the outer drip line (canopy edge) of a patch of vegetation. Where there are several small patches the cumulative patch area is considered by summing the area of all patches within 50 metres, measured from canopy edge to canopy edge of each patch.

What about native vegetation retained within buffers?

Native vegetation retained within buffers can contribute to the requirement for a revegetated buffer and should be physically retained where possible. However, if the vegetation is not protected by the full standard buffer width, it must be accounted for on paper as an assumed loss.

How must buffers be managed?

A 25m vegetated buffer must be managed as follows:

- Vegetated buffers must not be used for transport, turning circles, storage of machinery or equipment or any other activity
- Vegetation must be established within twelve months of planting the adjoining horticultural crop
- Species used in revegetation works must be based on the benchmark adjoining Ecological Vegetation Class species list for that area
- A minimum of 4 rows with plant spacing at 4 metre intervals in the buffer area is required and must achieve an average vegetation density of at least 400 plants per hectare
- If livestock grazing is to remain a component of the development enterprise, stock proof fencing is to be erected to exclude livestock from any vegetated buffer area
- Appropriate measures must be in place to maintain separation between irrigation activities and the buffer area and prevent encroachment.

Unvegetated buffers of any width must be managed as follows:

- Unvegetated buffers must not be used for works or development without the permission of regulatory authority
- Appropriate measures must be in place to maintain separation between irrigation activities and the buffer area and prevent encroachment.

How are buffers applied to pivot irrigation?

Buffers are only required between retained native vegetation and irrigation. Buffer distances are calculated from the edge of the irrigation area for unvegetated buffers, or from the edge of the pivot headland for vegetated buffers.

Where a WUL or T&UL is approved for pivot irrigation, a Particular Condition should be placed on the licence to the effect that “Pivot irrigation is approved for the land specified in the licence, other forms of irrigation systems must not be carried out on the land specified in the licence without the addition of particular conditions governing the use of such an irrigation system.

4.4 Further information

There are a number of key resources that can be used to guide delegates and applicants through the renewal, amendment or transfer of a works, or water use licence, including:

- Development Information Packages; (available from IDC)
- Specifications for Hydrogeological Investigations, prepared by Aquaterra; (available from IDC)
- Guidance on hydrogeological terminology and vegetation buffer description; (available from IDC)

- Process for assessing applications for maximum application rates; (available from IDC)
- The Victorian Mallee Irrigation Region – Standards for Site Environmental Management Plans (Sunraysia Environmental Pty Ltd, 2011) – see Mallee CMA website
- Dam information available from DELWP – see <https://www.water.vic.gov.au/managing-dams-and-water-emergencies/dams/guidance-notes>.

5 Other approvals required for irrigation development

Irrigation Development is likely to trigger a range of separate approvals.

5.1 Overview

With the exception of the *Aboriginal Heritage (AH) Act 2006* and the *Aboriginal Heritage Regulations 2018*, the issuing of a water use licence or a works licence cannot be withheld based on the requirements of other Acts of

Parliament; however, it is important for proponents to be aware that the proposed development may not proceed without first obtaining all necessary approvals.

5.2 Aboriginal Heritage (*Aboriginal Heritage Act 2006* & *Aboriginal Heritage Regulations 2018*)

Irrigation development activities (e.g. construction of river pumps, pipeline routes, land preparation etc.), in culturally sensitive landscapes can cause significant harm to Aboriginal cultural heritage.

AH Act and the AH Regulations provides for the protection and management of Victoria's Aboriginal heritage (e.g. Aboriginal places, objects and human remains etc.) from irrigation development activities on private land as well as public land.

A decision maker cannot grant a statutory authorisation for an activity which requires a CHMP, until the CHMP is approved (S.52 of the AH Act).

The approval agencies / decision makers are responsible for ensuring that the proponent is complying with the AH Act. This usually means having an approved CHMP lodged with the planning application. A cultural heritage permit (CHP) may be required where an exempt activity or a low impact activity may be planned that will or is likely to harm an Aboriginal place. The CHMP must cover the entire development proposal at the outset – even if the development will be carried out incrementally.

The requirements for a CHMP are defined by the AH Act. Most new irrigation developments will require a CHMP, because all, or part, of the associated activity will take place in areas cultural sensitivity, and because all, or part, of those activities will be high impact activities.

The following points apply to CHMPs:

- For new irrigation development a CHMP can be triggered by new utilities such as pipelines, which are a high impact activities on sites of cultural sensitivity.
- Most new irrigation development in the Mallee will be in an area of cultural sensitivity. For example, most of it will be on sand dunes, ancient lakes, sand sheets, lunettes and/or within 200m of a named waterway or across Parks Victoria land.
- A CHMP or cultural heritage permit for the planned development is only required within Victorian jurisdiction, and is relative to the lip of the bank of the Murray, which is the borderline. The border is difficult to define and there may be a need to investigate where the Victorian boundary applies to. This is an issue for proponents and agencies to resolve.
- Other triggers for a CHMP include activity areas that include areas within 50 m to of known or registered Aboriginal places, such as scarred trees, shell middens and artefact scatters. Also, part or all of an activity area that falls within a park (as defined, for e.g. in the National Parks Act 1975).
- A Registered Aboriginal Party (RAP) may elect to approve a CHMP. Where the RAP declines to do so, or where there is no appointed RAP, then the DELWP Secretary (that is, First Peoples - State Relations) will assess an application for approval of a CHMP. Maps of RAP areas are included in Appendix 1 - Figure 7 2 and Figure 7 3.
- A CHMP is prepared by a heritage advisor who is engaged by for the proponent.
- A voluntary CHMP can put a worthwhile risk management process in place.

5 Other approvals required for irrigation development

- There are exemptions under the AH Act to doing a CHMP. For example, where all of the land for the proposed activity has been subject to 'significant ground disturbance' an exemption may apply. If there is part of an area of cultural heritage sensitivity (other than a cave) that has been subject to 'significant ground disturbance' that part is no longer an area of cultural heritage sensitivity. 'Significant ground disturbance' is defined as disturbance of:
 - a) The topsoil or surface rock layer of the ground
 - b) A waterway.

By machinery in the course of grading, excavating, digging, dredging or deep ripping, but does not include ploughing other than deep ripping.

- Ploughing (other than deep ripping) to any depth is not significant ground disturbance. The types of machinery referred to does not include most historic machinery, but is intended to refer to machinery used in the modern day sense.
- Deep ripping is defined in the regulations to mean 'ploughing of soil using a ripper or subsoil cultivation tool to a depth of 60 centimetres or more'. The burden of proving that an area has been subject to significant ground disturbance rests with the applicant for a statutory authorisation for the activity. The responsible authority may assist by providing the applicant access to any relevant records it has about past land use and development.
- Note: even where significant ground disturbance has affected the land, if Aboriginal cultural heritage is present, it is protected by the AH Act. A proponent must then apply for a Cultural Heritage Permit or prepare a voluntary CHMP, where harm to Aboriginal cultural heritage cannot be avoided.

An application for a Cultural Heritage Permit may be required if a proposed activity or works will harm or is likely to harm Aboriginal cultural heritage (Aboriginal place or object). A Heritage Advisor can prepare and apply for a permit on the proponent's behalf. This is usually for individual Aboriginal places.

For all activities there are reporting and compliance requirements that need to be met when undertaking works. This includes:

- Stopping work immediately and contacting the Victorian police and State Coroner's Office if suspected human remains are discovered. Human remains should not be touched or removed
- If suspected Aboriginal cultural heritage place or objects on any public or private land in Victoria are found they must be reported promptly to First Peoples - State Relations under the *Aboriginal Heritage Act 2006*
- Notify First Peoples - State Relations of a discovery by completing a Preliminary Report form
- Avoid harm to any suspected Aboriginal place or objects
- Do not remove any Aboriginal cultural heritage
- Contact First Peoples - State Relations regarding management and protection of Aboriginal places.

Further information is available at:

- *Aboriginal Heritage Act 2006*: <https://www.vic.gov.au/aboriginalvictoria/heritage/aboriginal-heritage-act-2006-and-the-aboriginal-heritage-regulations-2018.html>
- *Aboriginal Heritage Regulations 2018*: <https://www.vic.gov.au/aboriginalvictoria/heritage/heritage-tools-and-publications/guides-forms-and-practice-notes-for-aboriginal-heritage-management.html>
- Aboriginal Affairs Victoria (<http://www.vic.gov.au/aboriginalvictoria>)
 - General enquiries – 1800 762 003
 - Information Victoria Call Centre – 1300 366 356
 - Email – Aboriginalaffairs@dpc.vic.gov.au
- Heritage Division, Department of the Environment, Water, Heritage and the Arts <http://www.environment.gov.au/heritage/about/indigenous/index.html>
 - Email: atsihpa@environment.gov.au
- *Aboriginal Heritage Act 2006* (amended 2016) (<http://www.vic.gov.au/aboriginalvictoria/heritage/aboriginal-heritage-act-2006-and-2016-amendment.html>)
- *Aboriginal Heritage Act 2006* – Information sheets
- *Aboriginal Heritage Regulation 2007*
- Guide to Preparing Aboriginal Cultural Heritage Management Plans
- Cultural Heritage Management Plan Tool
- *The Aboriginal Heritage Act 2006* – Advisory note - June 2007
- *Aboriginal and Torres Islander Heritage Protection Act 1984*
- Local Governments planning and building permits and Cultural Heritage Management Plan.

5.3 Public Land Manager Consent (*National Parks Act 1975 & Crown Land Reserves Act 1978*)

Works involving the development of privately-owned river pumps and associated infrastructure within the Public Conservation and Resource Zone and Public Park and Recreation Zone (usually along the Murray River) requires public land manager's consent. In order to construct, alter, operate, remove or decommission any works from Victorian water systems, consent from the public land manager is required first and before an application is made for a planning permit or a works licence.

Further information is available at:

- Parks Victoria *Pumping Infrastructure and Associated Works Assessment Sheet*
- Parks Victoria *Guidelines for Infrastructure and Works on or across Parks Victoria Owned/Managed land*
- Standards for Site Environmental Management Plans (Mallee CMA 2011) – refer Mallee CMA website.

5.4 Local Council Requirements *(Planning And Environmental Act 1989)*

Land use and development are controlled by “responsible authorities”, usually local government authorities, under planning schemes. Planning schemes set out policies and requirements for the use, development and protection of land. There is a planning scheme for every municipality in Victoria. Planning schemes throughout Victoria consist of:

- A State Planning Policy Framework
- A Local Planning Policy Framework (containing a Municipal Strategic Statement)
- Zone and overlay provisions
- Particular provisions
- General provisions
- Definitions.

The State Planning Policy Framework covers very broad issues/policies that affect the whole of the State, such as housing. The Local Planning Policy Framework contains a Municipal Strategic Statement and local planning policies. This section provides the long-term directions for land use and development in the local municipality.

The zone, overlay and particular provision requirements provide the controls over the type of use and development allowed in each zone. This is primarily the information with which new irrigation developers will be concerned.

There may also be local laws that could affect a development; for example, a local law may prohibit the discharge of water on to Council land, such as roadsides.

5.5 Planning Permits

It is not easy to make generalisations about when planning permits are required and when they are not. This will differ between municipalities and will depend on the land in question and the activity proposed. Each zone, overlay and particular provision will require different information to be submitted with a planning application.

For example, a parcel of land may be zoned farming, allowing general agricultural pursuits while requiring a permit for more intense uses such as a piggery or rice growing. The parcel may also be subject to a Salinity Management Overlay that may require a permit for earthworks, and a Rural Floodway Overlay, which may require a permit to construct or carry out any works. The proposed development may also be subject to a particular provision relating to, for example, signage or a local law may apply.

Prospective developers having identified a parcel of land, should in the first instance contact the local planning department or ask the IDC about specific requirements.

The planning approval process can vary in time depending on the complexity of the development and the level of referral required. Local Council may need to refer the application on to another agency, such as DELWP, the Mallee CMA, the Water Corporation (Lower Murray Water, Goulburn-Murray Water or Grampians-Wimmera Mallee Water) or VicRoads. In some cases, the agency must be given 28 days to respond, before Local Council can make a decision.

Most new irrigation developments will occur within existing Farming Zones and pump/pipeline infrastructure from the River Murray will occur within the Public Conservation and Resource Zone. The type of activities controlled in zones throughout the State will vary depending on the applicable overlays. Overlays contain special planning controls that protect special features of land covered by the overlay.

There are a number of types of Planning Scheme Overlays that are likely to affect rural land:

- Environmental Significance
- Vegetation Protection
- Significant Landscape
- Erosion Management
- Salinity Management
- Floodway
- Land Subject to Inundation
- Special Building
- Bushfire Management
- Heritage.

5.5.1 Uses and developments which may require a planning permit

This is a list of examples only and may not be complete. Please contact your relevant Local Council for advice:

- Rice growing or other ponded irrigation
- Cattle Feedlots
- Native Vegetation Removal (including limb lopping and impacts to the Tree Protection Zone (root system) of trees)
- Pump and/or pipelines on or across Crown Land
- Earthworks (including laser grading)
- Road crossings or under-boring
- Timber production
- Intensive animal husbandry
- Subdivision
- Constructing a building or other construction or carrying out works.

Where the removal of native vegetation is proposed to facilitate an irrigation development, any planning permit issued granting approval to remove native vegetation may be conditioned to require evidence that the requirements of the Water Act have been met. For example:

5 Other approvals required for irrigation development

“No removal of native vegetation is to occur until evidence of a [Water Use Licence] and/or [a Works Licence] having been issued under the Water Act 1989 in relation to the [proposed irrigation development] and/or [proposed works to construct a pump and pipeline to extract water from a regulated waterway] is provided to the responsible authority and/or [DELWP region].”

5.5.2 Local council planning approval

Application may be approved subject to conditions, or may be refused. If refused, an applicant may appeal the decision to VCAT.

5.5.3 Native vegetation regulations

A planning permit is required to remove, lop or destroy native vegetation under Clause 52.17 of all planning schemes in Victoria. All applications to remove native vegetation must demonstrate they have followed the three-step approach:

- 1 Avoid the removal, destruction or lopping of native vegetation
- 2 Minimise impacts from the removal, destruction or lopping of native vegetation that cannot be avoided
- 3 Provide an offset to compensate for the biodiversity impact from the removal, destruction or lopping of native vegetation.

The application must demonstrate how the proposed use or development has been sited or designed to avoid and minimise impacts on native vegetation, and that no feasible opportunities exist to further avoid and minimise impacts on native vegetation without undermining the key objectives of the proposal.

Biodiversity offsets compensate for the loss in biodiversity value when native vegetation is removed. An offset is delivered by protecting and managing native vegetation at an offset site. This protection and management improves the security and condition of the native vegetation, resulting in ‘gain’. This gain is used to meet the offset requirements when native vegetation is removed⁶.

There are three types of offsets:

- A species offset (Species Habitat Unit) is required when the removal of native vegetation has a significant impact on habitat for a rare or threatened species
- A general offset (General Habitat Unit) is required when the removal of native vegetation does not have a significant impact on habitat for a rare or threatened species
- Large tree attribute – offsets must include one large tree for every large tree to be removed.

Following approval of a planning permit, required offsets must be secured prior to the removal of any native vegetation. As part of the planning permit application, evidence must be provided that the required offset is available:

- For purchase from a third party
- Will be established as a new third party offset site
- Can be met by a first party offset.

First party offset sites are on land owned by the holder of a permit to remove native vegetation. They are used to meet landowners’ own offset requirements.

First party offset sites must have a ten-year management plan and must be secured in perpetuity with:

- An agreement with the Secretary to DELWP under section 69 of the *Conservation, Forests and Lands Act 1987*
- An agreement with a responsible authority under section 173 of the *Planning and Environment Act 1987*
- An agreement with Trust for Nature to register an offset covenant under the *Victorian Conservation Trust Act 1972*.

Prior to progressing First party offset sites, applicants must receive the written agreement from the statutory body that they will enter into a security agreement.

Third party offsets are established on land not owned by the permit holder. Third party offsets are purchased as a single, once-off transaction through a vegetation broker. Evidence that a third-party offset has been secured is a credit extract allocated to the permit from the Native Vegetation Credit Register. Further information is available at: https://www.environment.vic.gov.au/native-vegetation/native-vegetation-and-https://www.environment.vic.gov.au/__data/assets/pdf_file/0018/90360/Permitted-clearing-of-native-vegetation-Biodiversity-assessment-guidelines.pdf.

5.6 River Murray and NSW approvals

Developments on the Murray River may require a NSW Development Application or other approval from the relevant NSW municipality and/or authorities

(e.g. fisheries, maritime). Applicants are advised to contact the relevant Local NSW Council for advice on approvals.

⁶ This information as accessed from https://www.environment.vic.gov.au/__data/assets/pdf_file/0023/329450/Info-sheet-A-quick-comparison-of-first-party-and-third-party-offset-sites.pdf on 21 May 2019

5.7 Environmental protection and biodiversity conservation

The *Environment Protection and Biodiversity Conservation (EPBC) Act 1999* is the Australian Government's central piece of environmental legislation and is administered by the Commonwealth Government's Department of the Environment and Energy. It provides a legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places defined in the Act as matters of national environmental significance.

If a proposed project could impact on any matters of national environmental significance, it must be referred to the Commonwealth Government under the EPBC Act. The Significant Impact Guidelines outline a self-assessment process to determine if a referral is required. If a project is referred, the Commonwealth will advise if

the project is a Controlled Action requiring assessment against the requirements of the EPBC Act.

It is the applicant's responsibility to ensure their actions will not impact on a matter of national environmental significance and to ensure they have all necessary approvals before taking an action.

Further information is available at:

- Department of the Environment and Energy: 1800 803 772
- *Environment Protection and Biodiversity Conservation Act (EPBC) 1999 and Regulations 2000*
- Significant Impact Guidelines: <http://www.environment.gov.au/epbc/publications/significant-impact-guidelines-11-matters-national-environmental-significance>.

5.8 Flora and fauna conservation

The *Flora and Fauna Guarantee Act (FFG) 1988* is the key piece of Victorian legislation for the conservation of threatened species and communities and for the management of potentially threatening processes.

A Protected Flora Permit for works on public land must be obtained if the works may affect plants or communities listed in the Protected Flora List (DELWP 2017). The list includes wattles (*Acacia*), daisies (*Asteraceae*)

and rare plants. Native vegetation, biodiversity offset requirements, buffer distance requirements all need to be assessed. All native vegetation likely to be impacted should be checked against the Protected Flora List (DEPI, 2014) to determine whether FFG approvals are required. Protected Flora Permits can be obtained from the regional DELWP office (loddonmallee.environment@delwp.vic.gov.au).



Remnant vegetation at Robinvale. Minimising off-site impacts of Irrigation is a key objective.

5.9 Environment Effects Act 1978

If the proposed project could have a significant effect on the environment, it must be referred to the Victorian Minister for Planning for a decision on whether an Environmental Effects Statement is required. The criteria for referral include clearing 10 hectares or more of native vegetation, potential impacts on threatened species, important wetlands, and/or Aboriginal cultural heritage.

Pre-referral consultation with the DELWP Referrals Coordinator (03) 8392 5474 is encouraged or for more information to visit:

<https://www.planning.vic.gov.au/environmental-assessment/environment-effects-referrals>.

The bilateral agreement between Victoria and the Commonwealth Government avoids duplication of assessment processes. Victoria can assess proposals that the Commonwealth has determined as controlled actions under the EPBC Act, and are also likely to have a significant impact on the environment under the Victorian EE Act. The Commonwealth will still make the approval decision under the EPBC Act, relying on the assessment report prepared by the relevant Victorian decision-maker. See website:

<https://www.planning.vic.gov.au/environmental-assessment/environmental-assessment-bilateral-agreement> for more information.

5.10 Wildlife protection and conservation

The purpose of the *Wildlife Act 1975* is to establish procedures in order to promote the protection and conservation of wildlife, the prevention of taxa of wildlife from becoming extinct and the sustainable use of and access to wildlife; and to prohibit and regulate the conduct of persons engaged in activities concerning or related to wildlife. All native wildlife in Victoria is protected under the *Wildlife Act 1975*. For some developments a Wildlife Management Plan may be required, for example:

- where there is a significant land use change and a sustainable approach is required to manage wildlife populations (non-destructive control methods), for example changes from dryland agriculture to irrigated horticulture, particularly almonds, or
- where measures to protect, salvage and translocate native fauna are required during the removal of native vegetation. Wildlife handling, including the capture and translocation of fauna, requires a permit from DELWP, known as a Wildlife Management Authorisation.



Irrigation property near local wetland.

5.11 Floodplain management and works on waterways

5.11.1 Statutory Planning Responsibilities

The Mallee CMA has statutory planning responsibilities under the *Planning and Environment Act 1987*; as well as being the regional caretaker of river health. Activities include statutory planning and flooding referrals, works on waterways permitting, flood and river health awareness, development of and support for flood studies, including support for cost-effective flood mitigation measures and flood warning systems.

These waterway and floodplain statutory actions/responsibilities are underpinned by the Mallee Waterway Strategy 2014–2022 and the Mallee Floodplain Management Strategy 2018–2028.

5.11.2 Flood level advice

Flood advice for a specific property in the Mallee region can be obtained from the Mallee CMA. Flood advice helps landowners to understand their risks and is useful for:

- People looking to buy or rent a property
- Property owners looking to renovate their house or build an extension
- Developers looking to subdivide a property.

Generally, most works within a defined flood prone area require a planning permit from the local Council. Council will refer these development proposals to the Mallee CMA for advice and/or its approval. The Mallee CMA encourages landowners/developers to obtain flood level advice early so that any development proposal identifies and mitigates potential risks associated with flooding.

The Victorian Planning Provisions (VPPs) provide the basis for all statutory land use planning controls in Victoria. The main mechanisms of the VPPs with respect to floodplain mapping and control are contained in the following zones and overlays:

- Urban Floodway Zone (UFZ)
- Environmental Significance Overlay (ESO)
- Design and Development Overlay (DDO)
- Floodway Overlay (FO)
- Land Subject to Inundation Overlay (LSIO).

There are specific controls relating to buildings and works proposals contained within the overlay control. There are also extensive guidelines that the responsible authority must consider before deciding on an application. All applications must be referred to the relevant floodplain management authority, unless in the opinion of the responsible authority the proposal satisfies requirements or conditions previously agreed in writing between the responsible authority and the floodplain management authority.

5.11.3 Works on waterways

Many work practices in the past have caused major degradation of waterways. To protect and rehabilitate rivers and creeks there is a need to ensure that any works undertaken on designated waterways do not adversely affect the health of those waterways. Works and activities within the bed and banks of designated waterways require a permit from the Mallee CMA. Works and activities may include:

- Bridges
- Culverts
- Fords
- Service crossings
- Storm water outlets
- Drop structures
- Stream deviations
- Extractions
- Bed and bank stabilisation
- Large woody debris removal
- Vegetation management.

Further information regarding these matters can be obtained from the Mallee CMA, Planning and Reporting Officer, Strategy and Policy, on: (03) 5051 4377.

6 References

The Irrigation Development Guidelines are based on a range of foundation reports.

- Allen R.G. (1998) Crop evapotranspiration – Guidelines for Computing crop water requirements, FAO Irrigation and Drainage Paper 56.
- ANCOLD (2002) Guidelines on Assessment of the Consequences of Dam Failure.
- Aquaterra (2010) Mallee Hydrogeological Buffers. Final report to the Mallee CMA, February 2010.
- Cummins, T. (2009) Capping Annual Use Limits within Salinity Impact Zones in the Victorian Mallee, Final Report.
- DSE (1992) Nyah to South Australian Border Salinity Management Plans, Environmental Report.
- DSE (2007) Your Dam Your Responsibility, A Guide to the Managing of Safety of Farm Dams.
- DSE (2010) Advisory Note on Irrigation Development Guidelines in Victoria (Version 2.0).
- Mallee CMA (2013) Regional Catchment Strategy.
- Mallee CMA (2010) Land and Water Management Plan.
- Mallee CMA (2001) Waterway and Floodplain Management Strategies.
- Minister for Water (2007) Ministerial Determinations.
- NRE (2001) Siting and Design Guidelines for Water Diversion Works on or across Crown land. Department of Natural Resources and Environment, Mildura.
- Parks Victoria (2021) Application Form Instructions Pumping Infrastructure and Associated Works on Parks Victoria Estate PART 1. Guidelines for Infrastructure and Works on or across Parks Victoria Owned/Managed Land.
- Parks Victoria (2021) Application Form Instructions Pumping Infrastructure and Associated Works on Parks Victoria Estate PART 2. Pumping Infrastructure and Associated Works Assessment Sheet
- RMCG (2013) Augmentation of the Mallee Regional Policy for Setting Annual Use Limits on Water-Use Licences. Final report for the Mallee CMA, June 2013.
- Sunraysia Environmental Pty Ltd (2011) Victorian Mallee Irrigation Region Standards for Site Environmental Management Plans.

7 Appendix 1

Legislative Framework and Mallee Regional Catchment Strategy Context

7.1 Overall framework

There are two main legislative and administrative pathways associated with WULs:

- The *Victorian Water Act 1989*
- The Regional Catchment Strategy (RCS) developed under the *CaLP Act 1994*.

The WUL is the legislative vehicle that brings the two together. Outlined in this section are the relevant policies related to irrigation development. Links to key legislation

7.2 Victorian Water Act 1989

The *Victorian Water Act 1989* is the legislation governing the way water entitlements are issued and allocated in Victoria. It defines water entitlements and establishes the mechanisms for managing Victoria's water resources. Table 7-2 outlines sections of the *Victorian Water Act 1989* relevant to new irrigation development (DSE, 2010).

The setting of Water Use Objectives, WUL conditions and works licence conditions all occur under the *Victorian Water Act 1989*. The Water Corporations act as delegates of the Minister for Water, and on behalf of the Minister, authorise the use of water through issuing WULs and works licences. In granting a WUL or works licence, Water Corporations must assess whether the proposed use of water is consistent with the Ministerial Water Use Objectives and standard water use conditions, and they must follow the policy for managing works licences.

7.2.1 Ministerial determinations

Water entitlements have three component parts:

- A water share
- An extraction entitlement which is a share of delivery capacity (extraction shares from a waterway for private diverters or delivery shares within pumped districts)
- A water use licence (or registration for purposes other than irrigation) is a licence that authorises the use of water on a specific land parcel(s) subject to certain conditions.

Extraction share is issued as a condition on works licences. The issuing of additional extraction share may pose a risk to the deliverability of water for third parties. Therefore, applications that involve an increase in extraction share must be referred to the Minister for Water, or the Minister's delegate, as appropriate, before they can be approved in the water register.

Table 7-2 | Sections from the *Victorian Water Act 1989* relevant to new irrigation development.

Licence Type	Section	Description
Water Use Licence	Section 64L	A person requires a WUL under Section 64L to use water on land for irrigation purposes if the water is taken from a declared water system (i.e. an unbundled system such as the Murray water system).
	Section 64M	In dealing with an application, the relevant Water Corporation is required to consider: <ul style="list-style-type: none"> ▪ Impacts the proposed use may have on other persons or the environment (in particular water logging, salinity and nutrient impacts) ▪ Whether or not the proposed use can meet Standard Water Use Conditions that would apply to the licence, if granted ▪ Any comments received from the CMA, if the application was referred to the CMA and comments received within 30 days of the referral ▪ Any other matters the Minister considers relevant to that Corporation.
Take and Use Licence	Section 51	A person requires a licence under Section 51 of the Act to 'take and use' water from a groundwater system, which is not a declared system (i.e. water system that has not been unbundled).
	Sections 53 and 56	In considering an application for such a licence, and the conditions to be imposed, the Water Corporation is required to consider matters outlined under Section 53 and 56 of the Act, including: <ul style="list-style-type: none"> ▪ Any adverse effect the exercise of rights under the licence is likely to have on in-stream uses of water, on the aquifer or on the flow of water within the waterway (e.g. water availability, permissible consumptive volume, water quality) ▪ The effects on the implementation of the conservation policy of the government, and the need to protect the environment, including the riverine and riparian environment ▪ The purpose for which the water is to be used ▪ Any other matter that the Minister thinks fit.
Works Licence	Section 67	A works licence is required to construct and operate works on a waterway, groundwater bore and certain private dams. A works licence is generally required to pump water from a waterway or aquifer. A works licence can authorise a person to enter onto and install works on Crown Land; but it does not authorise the applicant to lay pipes on freehold land or to remove vegetation.
	Section 68	Section 68 lists the matters to be taken into account in considering an application for a works licence.

7.2.2 Water use objectives

The Ministerial Determinations set out five Water Use Objectives that WULs must meet:

- Managing groundwater infiltration
- Managing disposal of drainage
- Minimising salinity
- Protecting biodiversity
- Minimising cumulative effects of water use.

A copy of the Water Use Objectives is available from the Victorian Water Register at <https://waterregister.vic.gov.au/water-entitlements/about-entitlements/water-use-licences>

7.2.3 Standard water use conditions

The Ministerial Determination for Standard Water Use Conditions describes the baseline requirements that address the Water Use Objectives. These requirements need to be met in order for the relevant Water Corporation to grant and issue a WUL as a delegate of the Minister for Water. This determination applies to all WULs granted for use of water from water systems that are declared under Section 6A of the Act, including WULs that are deemed to have been created as a result

of declaration of a water system, and WULs granted after a water system has been declared ("new or varied WULs"), as set out in the determination.

There are two types of standard water use conditions depending on whether the WUL existed before 2007 unbundling (and therefore is deemed to be created under Schedule 15 of the *Victorian Water Act 1989*) or has been created (new) or varied post-unbundling. Each of these is discussed below. The main focus for the Guidelines is on new or varied licences.

Licences created under Schedule 15 of the Victorian Water Act 1989 (pre-unbundling).

WULs that existed at the time the Ministerial Determination for standard water use conditions came into effect, or were created as part of the process of unbundling the water system, are subject to the following standard conditions:

- Managing groundwater infiltration – Metering
- Managing groundwater infiltration – Ponded Irrigation
- Managing groundwater infiltration – Seasonal Adjustment
- Managing disposal of drainage water.



Centre Pivot, Murrayville.

New or varied water use licences (post unbundling).

Under the Ministerial Determination irrigation developments or irrigation expansion activities requiring new or varied WULs are required to meet higher performance levels that are closer to best practice. More stringent standard water-use conditions are therefore applied, including the development of an irrigation and drainage plan (IDP) as set out in Schedule 1 of the Ministerial Determination.

A list of conditions is provided in Appendices 5, 6, and 7. The key purpose of an IDP is to illustrate how the irrigation system design and proposed drainage water disposal takes into consideration the characteristics of the landscape and soil type, and how it minimises harmful side-effects. By encouraging proponents to match crop types to soil suitability, and then designing irrigation systems based around that information, the irrigation development can meet a number of the water use objectives, including minimising recharge to the groundwater.

A copy of the Standard Water Use Conditions is available from the Victorian Water Register at <https://waterregister.vic.gov.au/water-entitlements/about-entitlements/water-use-licences>

7.2.4 Site specific Water Use conditions

Where a development might require specific conditions to be placed on the WUL, which are not catered for within the standard conditions, the relevant Water Corporation may place “site specific conditions” on the licence provided that these conditions meet the Minister’s Water Use Objectives.

The ID Group may recommend additional conditions to meet individual requirements specific to a location or circumstance peculiar to a development proposal. This would normally occur in response to a specified environmental risk or risks, having been identified in association with the development, which may require a higher level of management or mitigation activity than allowed for within the standard water use conditions.

7.2.5 Policies for managing Works Licences

The procedures and processes to be applied to an application for renewal, amendment or transfer of a works licence are set out in the Policies for Managing Works Licences. These Policies apply to all licences under Section 67 of the *Water Act 1989* that are associated with the authorised take, use, conveyance or storage of water in Victoria. These policies were amended in October 2010 with all related previous policies being revoked.

Key requirements set out in Part two of the policies are:

- The scope of works
- Requirements for issuing of a works licence
- Guidance for assessing applications that include construction and installation of dams and bores.

7.2.6 Victorian Mallee Salinity Management Framework

Provisions that provided for a legislative salinity management framework in the Victorian Mallee came into effect on the 1 January 2020 under Part 11A of the *Water Act 1989*. The legislation makes provision for the determination of Salinity Impact Zones and the fixing of Salinity Impact Charges. The legislation largely

carry on the salinity management approach adopted in 1994 under the Victorian Government and community driven Nyah to the South Australian (SA) Border Salinity Management Plan (SMP). This approach ensures that the cost to mitigate or offset the salinity impact of irrigation is absorbed into the costs associated with irrigation development.

Zoning is a key element of the salinity management framework with Victorian Mallee irrigation area divided into five discrete salinity impact zones (SIZ): four low impact zones (LIZ) and one high impact zones (HIZ), see Figure 7-1. The zones were determined through an extensive assessment of the geological and hydrogeological characteristics of the region in the early 1990s (Thorne et. al., 1990) and refined in 2001 (SKM, 2001). The salinity impact zones indicate the relative potential for irrigation water to displace naturally saline regional groundwater and impact on Murray River water quality.

New irrigation development activities are more suitable to occur in the LIZs, where salinity impacts due to irrigation are lowest. Irrigation activities within the HIZ must make use of existing watering allowances as policy mechanisms limit any increase in the total volume of water applied in the HIZ due to the higher risk of impacting on river salinity.

The Policies for Managing Water Use Licences in Salinity Impact Zones adopted megalitres of annual use

limit (AUL) as the unit of account for irrigation-induced river salinity in the Victorian Mallee. The AUL governs the maximum number of megalitres of water that can be applied to the land covered by the licence in any year and is included on every WUL as a site specific condition. AUL is also the volume of water that together with the Salinity Impact Zone rate, determines the Salinity Impact Charge that must be paid to mitigate or offset salinity impacts of irrigation. The rates are prescribed in the Determination of Salinity Impact Zones and Salinity Impact Charges, available at <https://waterregister.vic.gov.au/water-entitlements/about-entitlements/water-use-licences>

The Determination of Salinity Impact Zones and Salinity Impact Charges specifies that charges (upfront Capital and ongoing Annual charges) are to be imposed in granting a new water use licence or in varying an existing water use licence. These charges are collected to fund works and measures that will mitigate or offset the salinity impact of irrigation. The Capital Charge may be paid either as a single up-front payment or as ten equal annual instalments. The instalments are adjusted by the consumer price index (CPI) each year and calculated so as to generate the same present value as the single up-front payment. The amounts payable in any given financial year can be found on the Lower Murray Water website at <https://www.lmw.vic.gov.au/billing-charges-fees/rural-charges-fees/>.

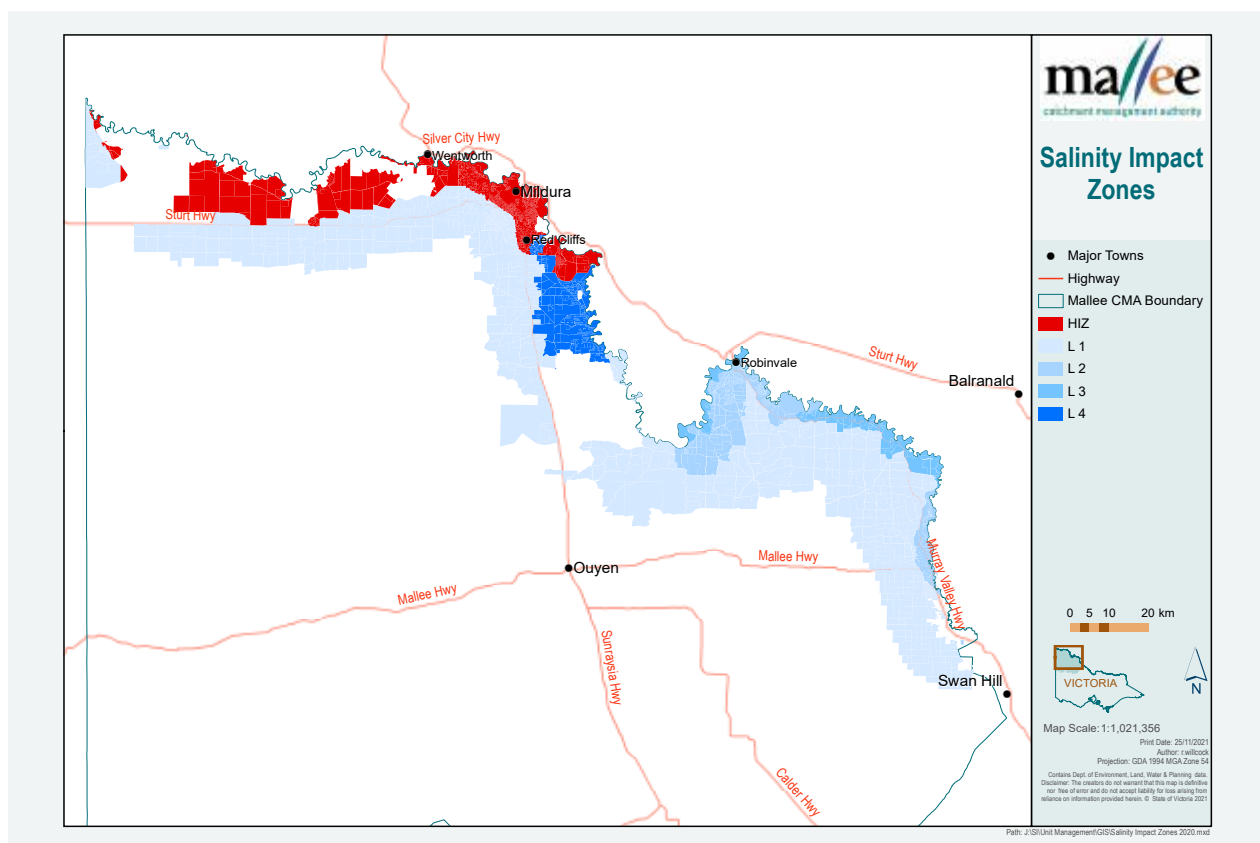


Figure 7-1 | Mallee Salinity Impact Zones



Almond Blossoms, Nangiloc.

7.3 *Catchment and Land Protection Act (CALP) 1994*

The *CaLP Act 1994* has an objective of establishing a framework for the integrated and coordinated management of catchments which will maintain and enhance long-term land productivity while also conserving the environment. The Act aims to ensure that the quality of the State's land and water resources and their associated plant and animal life are maintained and enhanced.

The *CaLP Act 1994* provides for the development of RCSs by Catchment Management Authorities which, among other things, must assess the nature, causes, extent and severity of land degradation of the catchments in the region and identify areas for priority action.

Local Planning schemes must have due regard for the RCSs. With regard to WULs, the RCSs relate to the conditions placed on the use of water.

7.3.1 Mallee Regional Catchment Strategy (2013–2019)

The RCS is the overarching integrated planning framework for land, water and biodiversity in the Mallee region (Mallee CMA, 2013). The RCS sits as an overall framework for the region's sub-strategies and action plans. It was developed in partnership with key regional stakeholders and provides a six-year plan for strategic action to support and focus the ongoing coordinated effort between land, water and biodiversity management agencies within the region.

The RCS sets an aspirational vision for the management of natural, cultural and productive landscapes; long-term (twenty year) objectives for the condition of assets within these landscapes; short-term (six year) strategic actions required to achieve these objectives; and identifies the regional partners responsible for the delivery.

The RCS does not set specific management activities or on-ground targets; these are found within supporting plans that sit under and align to the RCS, such as the Mallee (Irrigation Region) Land and Water Management Plan (LWMP).

7.3.2 Land and Water Management Plan

The LWMP seeks to protect the region's natural resource assets from the impacts of irrigation to ensure long-term sustainability of the irrigation industry and the community in which it is based. These guidelines align with the LWMP providing the requisite level of technical detail necessary for the approval process and the accounting of impacts.

The LWMP recognises that new irrigation development can have detrimental impacts upon the environment, particularly salinity impacts on the River Murray. The plan

continues the approach first adopted under the Nyah to SA Border Salinity Management Plan for salinity management.

It conforms to the Basin Salinity Management 2030 strategy with the impact of new irrigation developments regarded as the Mallee's, and more broadly Victoria's, biggest accountable action on the Murray Darling Basin Salinity Register A. The LWMP continues the case management approach to provide assistance to developers in navigating the various legislative requirements and assist in the implementation of these guidelines. These Guidelines are a companion document to the Mallee's LWMP that assist the region in meeting the water use objectives under section 64U of the *Water Act Ministerial Determinations*.

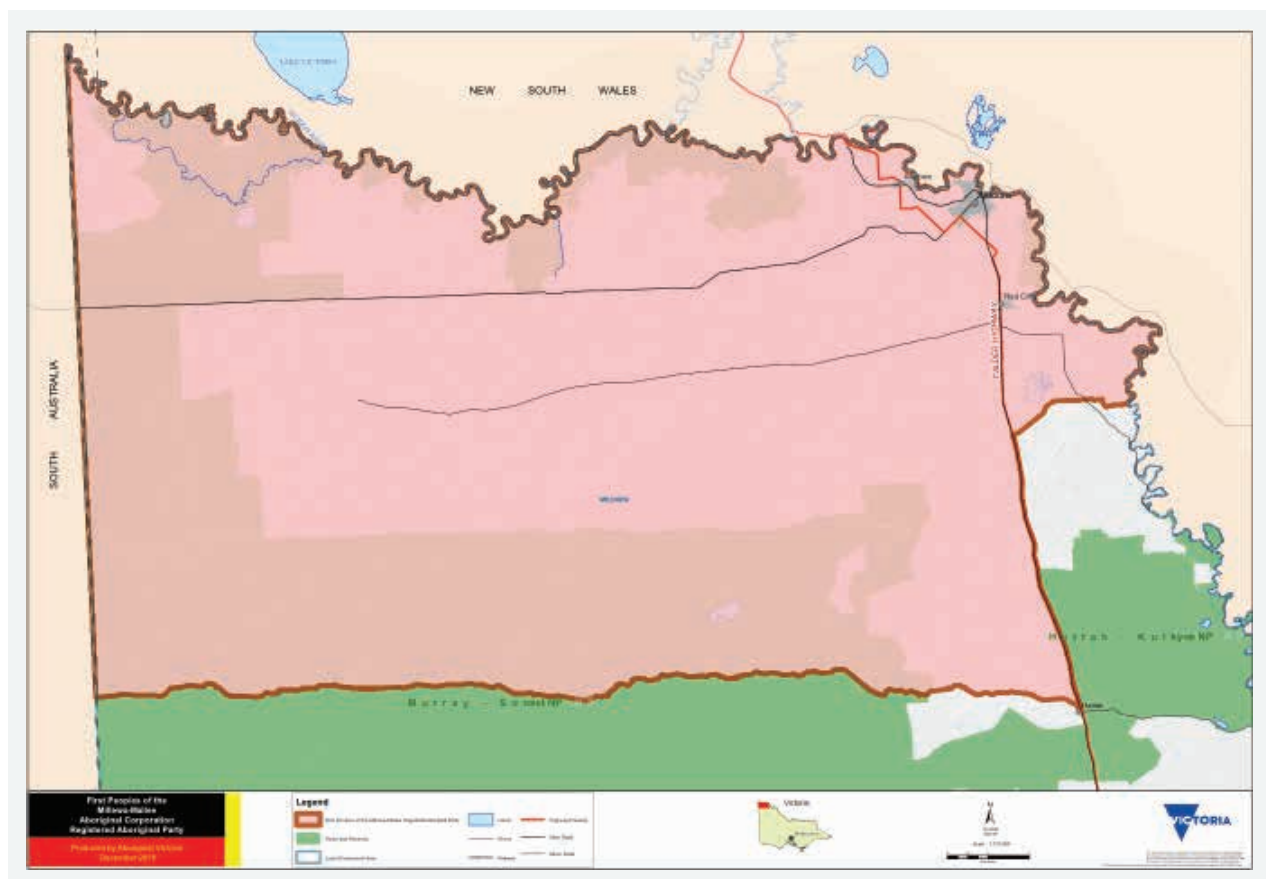


Figure 7-2 | First People of the Millewa-Mallee Aboriginal Party RAP area (map downloaded 17/6/19)

8 Appendix 2

Victorian Mallee New Irrigation Development Group - Terms of Reference

1.0 Background, Title, Purpose, Objectives and Membership, Roles and Responsibilities of the Mallee New Irrigation Development Group

1.1 Background

The area of Irrigation development in the Victorian Mallee has expanded by an average 1000 ha per year for the past 20 years and currently occupies in excess of 70,000 ha. While irrigation development provides social and economic benefits it can pose a threat to environmental and cultural values, in particular it can lead to increases in Murray River salinity unless it is well planned and managed.

It is necessary for irrigation developments to undergo an appropriate level of impact assessment to ensure conditions recommended for inclusion on irrigation related licences are consistent with statutory requirements, plans and consider relevant environmental and cultural values. Inter-agency co-operation is an integral part and requirement of the irrigation development assessment process.

The Mallee New Irrigation Development (NID) Group provides a forum to collaborate, evaluate and work through complex irrigation development proposals. The Terms of Reference for the NID Group define the function of the group. Individual roles and responsibilities are described for each member agency.

1.2 Title

Mallee New Irrigation Development Group, or NID Group.

1.3 Purpose

The purpose of this document is to define the objectives of the NID Group, its membership, roles and responsibilities. It will also define a Code of Conduct for all members to ensure the work of the group is not compromised or affected by any direct or indirect pecuniary or non-pecuniary interest and to ensure the appropriate confidentiality of information dealt with by the group.

1.4 Objectives

- a) Facilitate member input and co-ordination into the assessment of irrigation development consistent with the:
 - *Victorian Water Act 1989*
 - *Commonwealth Water Act 2007*
 - Ministerial Determination of Water Use Objectives (Vic)
 - Standard Water Use Conditions
 - Policies for Managing Works Licences
 - Policies for Take and Use Licences
 - Victorian Mallee Irrigation Region, Land and Water Management Plan
 - Victorian Mallee Irrigation Development Guidelines.
- b) Ensure opportunity is provided for the statutory requirements and issues of each member are addressed in the assessment of irrigation development.
- c) Provide advice to the Mallee Catchment Management Authority (CMA) on recommended amendments to the Victorian Mallee Irrigation Development Guidelines to ensure the document remains contemporary with current legislative requirements, government policies, strategies and relevant local issues.
- d) Provide guidance and advice to the Mallee Irrigation Development Coordinator in regard to irrigation development matters.
- e) Provide advice to water corporations in formulating conditions on Water Use Licences, Works Licences and Take and Use Licences.
- f) Ensure consistency in members' interactions with irrigation development proponents and the assessment of applications.
- g) Consider and endorse Work Plans and Irrigation Drainage Plans as part of the assessment process.

- h) Ensure irrigation developments are assessed and processed in a timely, cost-effective and efficient manner, consistent with response times detailed in the Victorian Mallee Irrigation Development Guidelines.

1.5 Membership

Membership comprises a combination of core, optional and observer agency representation.

Core Agency

- Two nominated Department of Jobs, Precincts and Regions (DJPR) staff members - Irrigation Development Coordinator (IDC) and Soils Advisor
- Two nominated water corporation staff members representing Lower Murray Water (LMW), Goulburn Murray Water (GMW) and Grampians-Wimmera Mallee Water (G-WMW)
- One nominated Department of Environment, Land, Water and Planning (DELWP) (Planning and Approvals) member
- Two nominated Mallee CMA members.

Optional Agency

- One nominated DELWP (Water) member
- One nominated DELWP (Natural Environment Program) member
- One nominated First Peoples - State Relations (FPSR) member
- One nominated Registered Aboriginal Party member(s)⁷
- One nominated Parks Victoria (PV) member.

The Core Agency membership of the NID Group is to ensure representation from key agencies contributing governance and accountability, skills, knowledge and experience to support the functions of the group. If members are unable to attend, a proxy can be nominated from the same agency.

At times the NID Group may need to consult with the Optional Agency membership. These agencies may attend less frequently or on an as needed basis.

Observer participation is at the discretion of the NID IDC.

When agencies are restructured the appropriate members will be sourced.

1.6 Roles and Responsibilities

Roles and responsibilities for agencies involved in the assessment of irrigation developments are defined in the Victorian Mallee Irrigation Development Guidelines. The following roles and responsibilities relate to NID Group meetings.

All members will:

- Review and comment on material of interest to their agency
- Keep their respective agency briefed on relevant activities and, if required, seek feedback or direction from within their organisations
- When agreed by the NID Group, disseminate information about activities to broader stakeholders
- Undertake prompt conflict resolution processes to address divergent views and technical issues in order to minimise delays in the irrigation development assessment process.

DJRP – IDC

- Convene and chair NID Group meetings to facilitate open discussion and delivery of outcomes to support the irrigation development assessment process
- Prepare meeting agendas and distribute meeting papers
- Document and distribute meeting minutes
- Track and report irrigation development assessment progress
- Present relevant Work Plans and Irrigation Drainage Plans.

Water Corporations – LMW, GMW, G-WMW

- Table water delivery issues and licence conditions for discussion
- Support member agencies to understand and participate in the irrigation development assessment process
- Act as the Minister's Delegate in respect to water licencing and entitlement matters.

DELWP – Planning and Approvals

- Provide advice on biodiversity matters
- Provide advice on Crown Land issues, licensing and authority to use Crown Land
- Provide advice and information on other agency assessment requirements and land use planning matters.

DELWP – Water and Catchments Group

- Provide relevant State legislation and policy advice
- Provide specialist assistance, advice and guidance on water availability and system-scale constraints
- Provide advice and interpretation of Ministerial policies.

DJPR – Soils Advisor

- Provide information on irrigation best management practices and soil amelioration strategies.

Mallee CMA

- Monitor the workings of the NID Group to ensure the irrigation assessment process is consistent with the Victorian Mallee Irrigation Development Guidelines
- Provide advice to the group on salinity, rivers, wetlands and floodplain matters.

⁷ Note- more than one may be required for considering applications across more than one RAP area.

Registered Aboriginal Party or First Peoples - State Relations

- Provide advice on cultural heritage matters.

Parks Victoria

- Provide advice on Crown Land matters administered under the *National Parks Act 1975* and the *Crown Land Reserves Act 1978*.

Decisions

All decisions will be based on consensus.

Frequency

Meetings will be conducted monthly. The IDC will convene each meeting. If a monthly meeting is not required the IDC can cancel the meetings as needed.

1.7 Meeting

Quorum

A quorum will comprise at least one representative from DJRP, LMW, DELWP and the Mallee CMA.

2.0 Code of Conduct

2.1 Principles for Code of Conduct for the NID Group

NID Group members should observe the following principles to guide their conduct:

- Ensure that the work of the NID Group is not compromised or affected by any direct or indirect pecuniary or non-pecuniary interest
- Ensure relevant information is dealt with professionally and confidentially by the NID Group, where appropriate
- Act in good faith for proper purposes without exceeding their powers
- Be frank and honest in their official dealings with each other
- Report any perceived or actual conflict of interest or pecuniary interest to the NID Group as soon as it is known
- Determine response to any perceived or actual conflict of interest or pecuniary interest.

Confidential information available to members must be used only in ways that are consistent with the obligations of members to act impartially, with integrity and in the public interest.

Where confidential information is provided to a NID Group member, care must be taken to ensure that the information is kept secure, and that numbers of copies are kept to the minimum necessary. If such information is to be disposed of by a committee member, it must be destroyed.

2.3 Improper or Undue Influence

NID Group members must take care not to use their position on the committee to influence any other member of the NID Group, staff, stakeholder organisations, for the purposes of obtaining any advantage for themselves, or any other person or body, whether that advantage is direct or indirect.

2.2 Confidentiality

All material dealt with by the NID Group shall be treated as confidential, unless otherwise determined.

Information available to members must not be used to obtain any advantage, whether direct or indirect, for themselves or for any other person or body.

2.4 Rights

Members have the following rights:

- Right to constructively debate any issues
- Right to be valued as a member of the committee
- Right to know
- Right to be heard.

9 Appendix 3

Process for assessing and approving Annual Use Limit (AUL) higher than Schedule 2 of the Standard Water Use Conditions

9.1 Annual Use Limits on WUL

The annual use limit associated with WUL is calculated by multiplying the area being irrigated with the specified 'maximum application rate' (MAR) as listed in Schedule 2 of the Ministerial Determination of Standard Water Use Conditions. There are a number of crops and canopy surfaces listed in Schedule 2.

Schedule 2 also allows for the application of higher MAR determined by applying the principles and methodology that are consistent with "Crop evapotranspiration – guidelines for computing crop water requirements", FAO Irrigation and Drainage Paper 56 (Allen R.G., 1998).

The FAO56 methodology is suitable for use by an individual grower or industry group to demonstrate that the higher application rate can be safely applied to unique crops or production systems all-the-while avoiding water logging, land and water salinisation and groundwater pollution.

This section below describes the process and information requirements for individual growers wishing to apply for an AUL for a crop type that is unlisted in Schedule 2 of the Ministerial Determinations for Standard Water Use Conditions.

9.2 Process for determining applications for issuing AUL using MARS above Schedule 2

The key steps in the process of determining applications MARs above Schedule 2 include: investigation, assessment, and approvals, and are outlined in Figure 9-1.

The information requirements and calculations used to determine a suitable MAR is available in a proforma from the IDC. It is recommended that the proforma is completed by a qualified agricultural scientist, irrigation engineer or an Irrigation Australia Certified Irrigation Designer or Certified Irrigation Agronomist.

The completed proforma is presented to the IDC for initial assessment by the ID Group. The ID Group may seek advice from DELWP, and/or a technical specialist, when reviewing the application and determining whether the application should be approved.

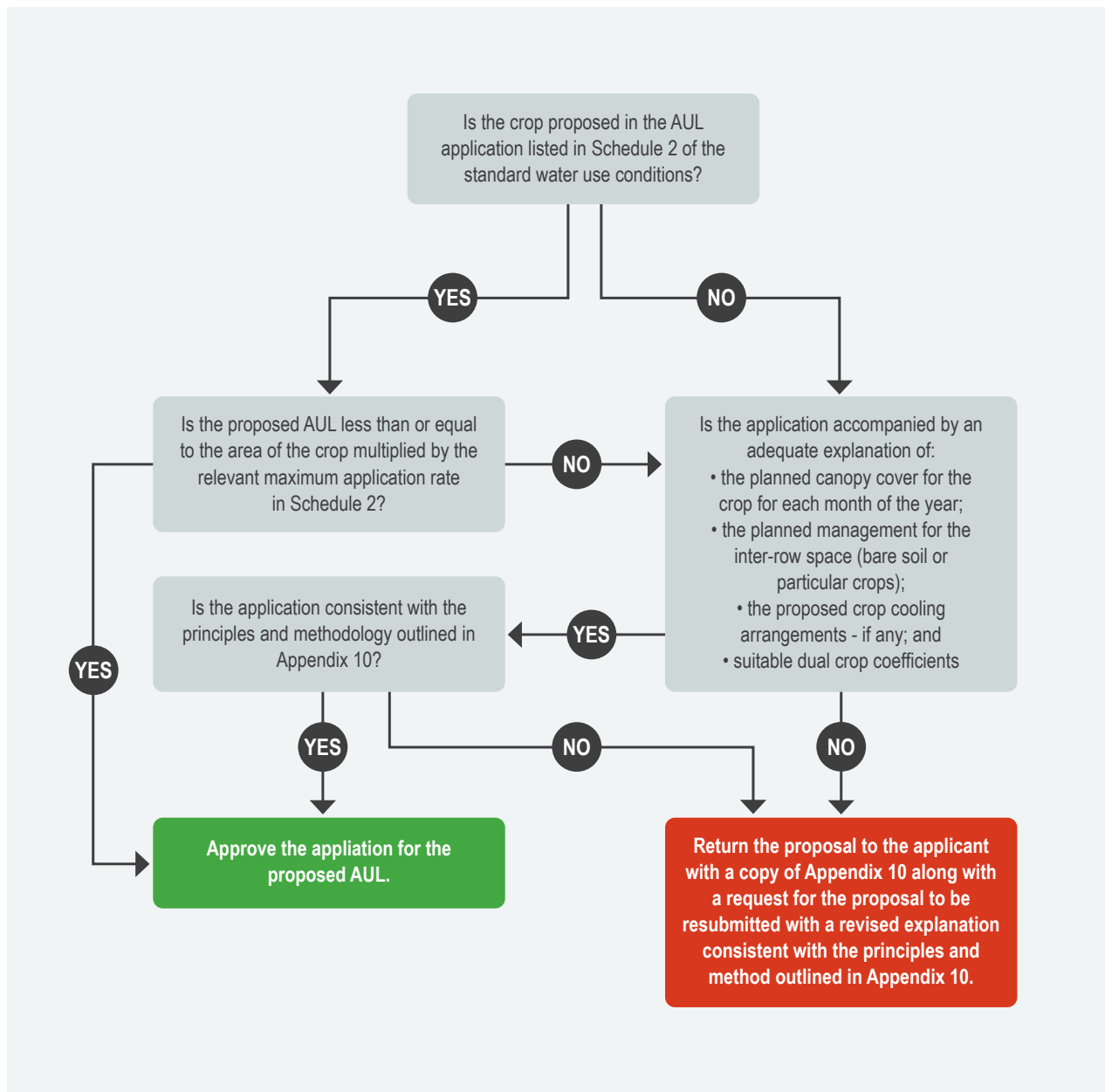


Figure 9-1 | Process for assessing AUL applications for MARs greater than Schedule 2 of the Minister's Determination - Standard Water Use Conditions

10 Appendix 4

Works License Conditions and Water-use License conditions are available in the Victorian Water Register.



Works on waterways

Siting and construction

The bore(s) must be drilled at the location specified in the application approved by the Authority.

Water may only be taken through the works if the works are sited and constructed in accordance with the endorsed works plan No. [works plan number].

The bore must be constructed on the land described in the licence, at coordinates E: [Easting], N: [Northing], Zone: [MGA Zone].

If after drilling the bore is considered unsatisfactory a replacement bore may be drilled on the land specified in the licence.

The bore(s) must be drilled at the location specified in the application approved by the Authority, but if after drilling a bore is considered unsatisfactory, a replacement bore may be drilled at an alternative site no greater than 20 metres from the authorised site and no closer to neighbouring bores or nearby waterways, or as authorised by the Authority before the commencement of drilling.

The licence holder must ensure the works are sited and constructed to the satisfaction of the Authority.

The works referred to in the licence must not be used until the Authority issues a licence to operate the works.

Preventing pollution

All earthworks must be carried out, and all drilling fluids and waters produced during construction and development must be disposed of, in ways that avoid contaminating native vegetation, waterways, aquifers, the riparian environment, the riverine environment or other people's property.

Construction must stop immediately if the Authority reasonably believes that fuel, lubricant, drilling fluid, soil or water produced during construction and development is at risk of being spilled into native vegetation, waterways, aquifers, the riparian environment, the riverine environment or other people's property.

The licence holder must construct and maintain bund walls, in accordance with the timeframe, specifications, guidelines or standards prescribed by the Authority, to prevent fuel, lubricant, drilling fluid, soil or water produced during construction and development from being spilled into native vegetation, waterways, aquifers, the riparian environment, the riverine environment or other people's property.

Water must not be taken through the works if the Authority reasonably believes fuel, or lubricant, or any other matter used in connection with works and appliances associated with this licence, is at risk of contaminating a waterway, or aquifer, or the riparian or riverine environment.

The licence holder must construct and maintain bund walls around any hydrocarbon-fuel-driven engine, motor, fuel storage, or chemical storage used in connection with this licence, in accordance with the timeframe, specifications, guidelines and standards prescribed by the Authority.

Water must not be taken through the works or works associated with the dam if the Authority reasonably believes fuel, or lubricant, or any other matter used in connection with works and appliances associated with this licence, is at risk of being spilled into a waterway, or aquifer, or into the riparian or riverine environment. **(Operation must not cause pollution – associated works).**

Decommissioning must stop immediately if the Authority reasonably believes that fuel, lubricant, drilling fluid, soil or water produced during construction and development is at risk of being spilled into native vegetation, waterways, aquifers, the riparian environment, the riverine environment or other people's property.

The licence holder must not store bulk fuel, lubricant, fertiliser or chemicals on land managed by Goulburn Murray Water. (No storage of fuel etc).

The licence holder must report any fuel, lubricant, fertiliser or chemical leak(s) that impact on land managed by Goulburn Murray Water and immediately resolve the leak(s) immediately along with any reclamation works necessary. (Report and resolve fuel etc leaks).

Using waterways and wetlands to store or convey water

Unless all the corrective action procedures listed on this licence have been initiated, water may not be taken through the works if monitoring records indicate that groundwater salinity concentrations have reached [salinity reading (EC)] EC.

Thirty days after the corrective action thresholds on this licence are breached, water must not be taken through the works unless [remedial action].

Water may only be taken through the works while the licence holder meets the relevant monitoring and correctional requirements with regard to: - installing and maintaining the specified monitoring equipment; - following the specified data reading, recording and auditing requirements; and - carrying out the specified corrective action procedures, within the specified time, if the specified threshold for this is breached as specified in the endorsed works plan No. [works plan number].

Water may only be taken through the works if the required monitoring instruments have been properly installed and maintained, the total number of these instruments is [number of instruments].

Water may only be taken through the works while the licence holder records monitoring data [frequency].

Water may only be taken through the works while the licence holder posts recorded monitoring data to the Authority [frequency].

Water may only be taken through the works while appropriately accredited auditors audit monitoring data [frequency].

Water may only be used for irrigation while audits are being duly carried out by auditors with accreditation through ISO 1400.

Water may only be used for irrigation while audits are being duly carried out by auditors with accreditation through [accreditation agency].

Unless all the corrective action procedures listed on this licence have been initiated, water may not be taken through the works if monitoring records indicate that water tables have risen to within [level (m)] metres of the soil surface.

Unless all the corrective action procedures listed on this licence have been initiated, water may not be taken through the works if monitoring records indicate that water tables have risen to [level (m AHD)] metres AHD.

Unless all the corrective action procedures listed on this licence have been initiated, water may not be taken through the works if monitoring records indicate that [description].

Thirty days after the corrective action thresholds on this licence are breached, water must not be taken through the works unless previously agreed flow management contingencies are invoked.

Method of taking

The licence holder must at all times provide the Authority with safe access to inspect all works and appliances used to take water under this licence.

Take volume and rate

The maximum volume that may be taken under this licence in any one day is [volume (ML/day)] megalitres per day.

Passing flows

The licence holder must, at all times that there is natural inflow into the on-waterway storage, maintain a flow in the waterway downstream of the storage, to the satisfaction of the Authority.

Bypass mechanisms must be installed and maintained in good working order to ensure that outside the take period, none of the natural flow in the waterway is harvested into the dam.

Bypass mechanisms must be installed and maintained in good working order to ensure that a) outside the take period, none of the natural flow in the waterway is harvested into the dam, and b) during the take period, minimum passing flow rates of [volume (ML/day)] megalitres per day are passed by the dam.

Bypass mechanisms must be installed and maintained in good working order to ensure that no run-off is harvested outside the take period.

Rosters and restrictions

When directed by the Authority, water must be taken in accordance with the rosters and restrictions determined by the Authority, and advised to the licence holder.

When directed by the Authority, water must be taken in accordance with the rosters and restrictions as set out in [name of document] that is available on the Authority's website.

Water may only be taken through the works referred to in the works licence if, in a period of rationing or other restriction, it is taken in accordance with the share of the flow represented by the specified extraction share of [extraction share – taken from system] ML/day.

Unless otherwise directed by the Authority, water must be taken in accordance with the rosters and restrictions as set out in the management plan, local water management rules or other document that is available on the Authority's website or at the Authority's main office, and before taking water under this licence the licence holder must check the restriction that currently apply.

Water must be taken in accordance with the rosters and restrictions as set out in the management plan, local management rules or other document that is available on the Authority's website, and before taking water under this licence the licence holder must check the restrictions that currently apply.

Water must be taken in accordance with the rosters and restrictions as set out in [name of document], that is available on the Authority's website, and before taking water under this licence the licence holder must check the restrictions that currently apply.

Metering of water taken and used

Water may only be taken under this licence if it is taken through a meter approved by the Authority.

Water may need to be taken through a meter if requested by the Authority.

Meters must be installed, in accordance with the specifications set by the Authority, at the licence holder's expense.

Meters must be installed, in accordance with the specifications set by the Authority, at the Authority's expense.

Meters used for the purpose of this licence are deemed to be the property of the Authority.

Meters used for the purpose of this licence are deemed to be the property of the licence holder.

The works referred to in the licence must not be made operational until the licence holder provides the Authority with safe access to meters for the purpose of reading, calibration or maintenance.

The licence holder must at all times provide the Authority with safe access to meters for the purpose of reading, calibration or maintenance.

A data logger must be fitted to the meter, at the licence holder's expense, to record water usage and pumping times.

The licence holder must notify the Authority within one business day if the meter ceases to function or operate properly.

The licence holder must, if required by the Authority, keep an accurate record of the quantity of water taken under this licence and allow the Authority to inspect this record at all reasonable times, and provide a copy of the record when requested.

The licence holder must not, without the consent of the Authority, interfere with, disconnect or remove any meter used for the purposes of the licence.

The Authority may, if it deems necessary, make an estimate of the total volume of water taken under this licence.

Metering of matter disposed

Meters must be installed, in accordance with the specifications set by the Authority, at the [select who pays for the meter] expense.

Meters used for the purpose of this licence are deemed to be the property of [select who owns the meter].

The licence holder must at all times provide the Authority with safe access to meters for the purpose of reading, calibration or maintenance.

A data logger must be fitted to the meter, at the licence holder's expense, to record water usage and pumping times.

The licence holder must notify the Authority within one business day if the meter ceases to function or operate properly.

The licence holder must not, without the consent of the Authority, interfere with, disconnect or remove any meter used for the purposes of the licence.

Operation and maintenance (BOM / OM)

Water may only be taken through the works at the specified location.

Water may only be taken through the works if the works are located at the location specified in the licence under [works location].

Water may only be taken through the works if the works are operated, maintained and audited in accordance with the approved dam-safety surveillance plan.

The licence holder must keep all works, appliances and dams associated with this licence, including outlet pipes and valves, in a safe and operable condition, and free from obstacles and vegetation that might hinder access to works.

The licence holder must at all times provide the Authority with safe access to inspect all works and appliances used to take water under this licence. **(Access to works and appliances).**

Water may only be taken through the works if the works are sited, constructed, operated and maintained to the satisfaction of the Authority.

Water may only be taken through the works if the works are operated and maintained in accordance with the endorsed works plan No. [works plan number].

Works must not be altered, removed or decommissioned without a licence that authorises alteration, removal or decommissioning. (Licence req'd to alter, remove, decommission).

The maximum volume of matter disposed of under this approval in any twelve-month period, from 1 July to 30 June, must not exceed [volume (ML/year)] megalitres.

The maximum volume of matter that may be disposed of under this approval in any one day is [volume (ML/day)] megalitres.

Protecting biodiversity

Water must not be taken through the works if the Authority reasonably believes that the taking of water, through the works and appliances associated with this licence, is at risk of causing damage to the environment.

The licence holder must, if required by the Authority, remedy any damage to the environment that in the opinion of the Authority is a result of the installation, operation or maintenance of the works.

Matter must not be disposed of through the works if the Authority reasonably believes that such disposal will have a detrimental impact on the beneficial use of surrounding groundwater, land and surface water.

The licence holder must not remove or displace any native vegetation unless approval from the appropriate Authority has been obtained. (No removal - native vegetation).

Environmental watering

Water may only be taken under this licence during periods of regulated flow, if it is ordered from the Authority a minimum of [No. of days] (or other such period as may be determined by [Relevant Authority]) prior to commencement of pumping.

Water may only be taken under this licence during periods of unregulated river flow if it is taken with the express approval of the Authority.

Water must not be taken through the works referred to in the works licence at any time unless [Relevant Authority] has expressly confirmed that sufficient water is available in the river.

When directed by the Authority, the licence holder must limit or cease pumping if the Authority reasonably believes that pumping would otherwise reduce the share of flow available to the holders of extraction share.

Water may only be taken through the works referred to in the works licence if the licence holder provides the Authority with an accurate meter reading at the start and finish of each pumping event.

Water may only be taken through the works referred to in the works licence if it is taken in accordance with the operating plan approved by the Authority.

Works associated with Works on a waterway

Dam construction and supervision standards

The dam and associated works must be designed and constructed under the direct supervision of an engineer eligible for membership of the Institution of Engineers Australia who is able to demonstrate competence in the design, construction supervision and surveillance of dams.

The licence holder must ensure that the engineer responsible for design and construction of the dam holds professional indemnity insurance for an amount of \$ [insurance amount (\$M)] million with an undertaking to maintain the cover for at least seven years following the construction of the dam.

The licence holder must notify the Authority at least five business days prior to work commencing on the dam, and must also notify the Authority if work is to cease for an extended period during construction.

The dam must be sited and constructed in accordance with: a) the timeframe, specifications, guidelines and standards prescribed by the Authority, and b) the endorsed works plan No. [works plan number].

The dam and associated works may only be made operational if the dam and works are sited and constructed in accordance with the endorsed works plan No. [works plan number].

The dam and associated works must not be made operational until the Authority acknowledges receipt of a completed and acceptable inspection report certifying that the dam and associated works have been constructed in accordance with: a) the endorsed works plan No. [works plan number], and b) the conditions of this licence.

Dam safety and surveillance

The dam and associated works must not be made operational until the Authority acknowledges receipt of a completed and acceptable dam-safety surveillance plan and an emergency management plan. (Receipt of surveillance and emergency management plans).

The dam and associated works must not be operated until the Authority acknowledges receipt of a completed and acceptable dam-safety surveillance plan and an emergency management plan prepared with appropriate regard to the ANCOLD guidelines.

The dam and associated works must not be altered, removed or decommissioned without a works licence that authorises alteration, removal or decommissioning. (Licence req'd to alter, remove, decommission - DAM+associated Works).

The licence holder must lodge two copies of the dam-safety emergency management plan with the Authority (one will be submitted to the SCC by the Authority). (Dam-safety EMP - two copies to Authority).

The licence holder must lodge a copy of the dam safety emergency management plan with and the relevant Municipal Council addressed to the Municipal Emergency Resources Officer. (Dam-safety EMP - copy for Municipal Council).

The licence holder must lodge a copy of a dam-safety emergency management plan with the Authority and the relevant Municipal Council addressed to the Municipal Emergency Resources Officer.

The licence holder must provide the Authority with the results of any surveillance program within twelve months of the issue of this licence and thereafter at any other time requested by the Authority. (Results of surveillance program).

The licence holder must, if directed by the Authority, amend the surveillance program and emergency management plan at any time.

The dam safety emergency plan must include actions to be taken by the licence holder that provide effective and timely warnings to potentially impacted downstream communities, Victorian Police, Victoria State Emergency Service and the Authority in the event of a possible or actual dam failure. (Warning if dam failure - haz).

The licence holder must, in the event of a potential or actual dam failure, immediately provide warnings to potentially impacted downstream property owners and communities, SES, Victoria Police, Council and the Authority and must take steps to make the dam safe.

If a deficiency is found in the structure of the dam that is not minor in nature, the licence holder must immediately advise the Authority of the nature of the deficiency and engage a suitably qualified engineer to propose a program to rectify it, and complete the works having appropriate regard to the ANCOLD guidelines.

The licence holder must carry out, to the satisfaction of the Authority, any remedial works identified by a suitably qualified engineer.

The Authority may require the licence holder to undertake a risk assessment consistent with ANCOLD Guidelines and provide the results of this assessment to the Authority because this dam has an ANCOLD hazard category of high or extreme. When directed by the Authority the licence holder must engage a suitably qualified engineer to undertake a risk assessment on the nominated dam(s) consistent with ANCOLD Guidelines and must provide the results of the assessment to the Authority within the specified timeframe.

The dam safety surveillance plan and dam safety emergency plan must be signed off by a suitably qualified engineer.

Bore construction and operation

Construction standards

The bore(s) must be constructed, and where relevant decommissioned, in accordance with the Minimum Construction Requirements for Water Bores in Australia, Edition 3 or its successor.

The bore(s) must be constructed, and where relevant decommissioned, in accordance with the ARMCANZ (2nd Edition September 2003) guidelines relating to monitoring bores.

Any bore(s) must be decommissioned in accordance with Minimum Construction Requirements for Water Bores in Australia, Edition 2.

The bore(s) must be altered, and any replacement bore(s) must be constructed, in accordance with the Minimum Construction Requirements for Water Bores in Australia, Edition 2.

Drilling licence and supervision requirements

The bore(s) must be constructed by, or under the direct supervision of, a driller licensed under the *Water Act 1989* as a [driller class] driller with appropriate endorsements.

The bore(s) must be constructed by, or under the supervision of, a driller licensed under the *Water Act 1989* as a Class 1, 2 or 3 driller with appropriate drilling endorsement. (Driller endorsement – construction GMW⁸).

The bore(s) must be constructed by, or under the supervision of, a driller licensed under the *Water Act 1989* as follows:

- a To depths of 25 metres, a Class 1, 2 or 3 driller with appropriate drilling endorsements
- b Depths greater than 25 metres, a Class 2 or 3 driller with appropriate drilling endorsements]

(Driller endorsement – construction GMW⁹).

Bore construction must be supervised, and certified to be in accordance with the approved application, by a person accredited as a [accreditation].

The bore(s) must be decommissioned by, or under the direct supervision of, a driller licensed under the *Water Act 1989* and endorsed as a driller, with appropriate endorsements.

Bore decommissioning must be supervised, and certified to be in accordance with the approved application, by a person accredited as a [accreditation].

The bore(s) must be altered by, or under the direct supervision of, a driller licensed under the *Water Act 1989* and endorsed as a driller, with appropriate endorsements.

Bore alteration must be supervised, and certified to be in accordance with the approved application, by a person accredited as a [accreditation].

If artesian pressure is expected or encountered, then casing must be installed in the bore(s) to a suitable depth and cemented back to the well head to prevent the outbreak of pressurised water. If artesian pressure is encountered a suitable valve must also be fitted to the bore.

If artesian pressure is expected or encountered, then a driller licensed under the *Water Act 1989*, and endorsed as a class 3 driller, must install casing in the bore(s) to a suitable depth, and in a suitable manner, to prevent its outbreak. A suitable valve must be fitted to the bore.

The licence holder must ensure that the licensed driller notifies the Authority's Drilling Inspector at least seven days prior to work commencing on the bore(s), and must also notify the Authority's Drilling Inspector if work is to cease for an extended period during drilling.

The licence holder must ensure that the licensed driller notifies the Authority's Drilling Inspector at least one day prior to work commencing on the bore(s), and must also notify the Authority's Drilling Inspector if work is to cease for an extended period during drilling.

The licence holder must ensure that the licensed driller notifies the Authority's Drilling Inspector at least one day prior to work commencing on any grouting operations and must not proceed with the work unless authorised by the Drilling Inspector.

At least seven days before commencing construction on this bore, the holder of the licence must arrange an inspection time with the licensing Supervisor, [water authority – taken from system] [district office].

Bore completion report

A Bore Completion Report must be submitted to the Authority within 28 working days of the bore(s) being completed.

⁸ Only if not located in the Goulburn Murray Sedimentary Plains. This is automated for Online BCL applications, but is added manually (CON005535) for applications processed in AX.

⁹ For bores located in the Goulburn Murray Sedimentary Plains. This is automated for Online BCL applications, but is added manually (CON005558) for applications processed in AX.

The licence holder must ensure that the licensed driller sends a Bore Completion Report to the Authority within twenty-eight working days of the bore(s) being completed.

The works referred to in the licence must not be made operational until the Authority acknowledges receipt of an acceptable Bore Completion Report.

The works referred to in the licence must not be made operational until the licence holder sends a water sample to the laboratory nominated by the Authority.

Protecting water resources

No more than one bore may be brought to final development under this licence.

No more than one work may be brought to final development under this licence.

No more than [number of bores] bore(s) may be brought to final development under this licence.

No more than [number of works] work(s) may be brought to final development under this licence.

Any unsatisfactory bores must be decommissioned so as to eliminate physical hazards, conserve aquifer yield, prevent groundwater contamination and prevent the intermingling of desirable and undesirable waters.

At the completion of drilling, and before the drilling rig leaves the site, all but one bore must be decommissioned so as to eliminate physical hazards, conserve aquifer yield, prevent groundwater contamination and prevent the intermingling of desirable and undesirable waters.

At the completion of drilling, and before the drilling rig leaves the site, all but [number of bores] bore(s) must be decommissioned so as to eliminate physical hazards, conserve aquifer yield, prevent groundwater contamination and prevent the intermingling of desirable and undesirable waters.

At the completion of drilling, and before the drilling rig leaves the site, all bore(s) must be decommissioned so as to eliminate physical hazards, conserve aquifer yield, prevent groundwater contamination and prevent the intermingling of desirable and undesirable waters.

The bore(s) must be located at least 30 metres from any Authority's channel, reserve or easement unless authorised by the Authority. (Drilling location - 30 metres from Authority's works).

The bores(s) must be located at least 100 metres from any waterway unless otherwise authorised by the Authority. (Drilling location – distance from waterways 100m).

The bore must be located at least 200 metres from any waterway, wetland, swamp or other water body unless otherwise authorised by the authority. (Drilling location – distance from waterways 200m).

The bore(s) must be located at least [distance from nearest waterway (m)] from the nearest waterway, unless otherwise authorised by the Authority's Drilling Inspector.

The bore(s) must be located at least [distance (m)] metres from the nearest waterway, unless otherwise authorised by the Authority's Drilling Inspector.

The bore(s) must be located at least [distance (m)] metres or less from the bore(s) being replaced.

The bore(s) must be located at least [distance from other bores (m)] from any bore(s) not in the licence holder's ownership.

The bore(s) must be located at least [distance (m)] metres from any bore(s) not in the licence holder's ownership.

The bore(s) must be located at least 30 metres from any authority's channel, reserve or easement.

The bore(s) must be located at least [distance (m)] metres from any authority's channel, reserve or easement.

Water must not be taken and used from the bore without specific written permission of the Water Authority, except for samples taken solely for the purpose of sampling, testing and analysis.

Protecting water quality

The bore(s) must be constructed so as to prevent aquifer contamination caused by vertical flow outside the casing.

If two or more aquifers are encountered, the bore(s) must be constructed to ensure that an impervious seal is made and maintained between each aquifer to prevent aquifer connection through vertical flow outside the casing; under no circumstances are two or more aquifers to be screened within the one bore or in any other manner to allow connection between them.

If two or more aquifers are encountered, the bore(s) must be constructed to ensure that an impervious seal is made and maintained between each aquifer to prevent aquifer connection through vertical flow outside the casing; the bore must be adequately cemented and grouted in a manner that will exclude the upper alluvial aquifer, until a non-permeable clay aquitard is intercepted. Under no circumstances are two or more aquifers to be screened within the one bore or in any other manner to allow connection between them.

Boreheads must be constructed, to ensure that no flood water, surface runoff or potential subsurface contaminated soakage can enter the bore or bore annulus.

Screening and casing must proceed to at least the proposed depth unless the Authority approves, in advance, drilling to less than this depth.

Drilling must not exceed the maximum depth.
(Maximum depth).

After suitable development time, the holder of the licence must take a sample of water proposed to be extracted for use, and send to ALS Environmental:
PO Box 9148, Scoresby VIC 3179
Tel: (03) 8756 8000
Fax (03) 9763 1862

After suitable development time, the holder of the licence must take a sample of water proposed to be extracted for use, and send to SGS Environmental Services:
PO Box 1956, Traralgon VIC 3844
Tel: (03) 5172 1555
Fax (03) 5174 9320

The licence holder must ensure minimal soil disturbance associated with the installation of diversion works.
(Minimal soil disturbance).

The licence holder must engage with Goulburn Murray Water's Manager, Dams Operations or delegate to determine most appropriate measure of erosion control associated with the soil disturbance on the foreshore.
(Erosion control - foreshore).

Protecting other water users

The diameter of the bore-casing must not exceed [diameter (mm)] millimetres.

The diameter of the drill casing must not exceed 130 millimetres.

The bore(s) must be constructed so that water levels in the bore(s) can be measured by an airline, a piezometer or a method approved in writing by the Authority.

The licence holder must, if required by the Authority, monitor and record water levels in the bore(s) before and after pumping; the licence holder must also provide this information in writing as directed by the Authority.

The approval holder must, if required by the Authority, monitor and record water levels in the bore(s) before and after pumping; the approval holder must also provide this information in writing as directed by the Authority.

The licence holder must, at the licence-holder's expense, if required by the Authority, conduct a pumping test and obtain a hydrogeological report, to the Authority's specification, on the potential for bore operation to interfere with any bore, aquifer, groundwater dependent ecosystem or waterway.

The licence holder must, if required by the Authority, provide the Authority with the results of water quality tests on samples of water pumped from the bore.

The licence holder must provide the Authority with safe access to the licensed bore and works for the purposes of obtaining water level measurements, water samples and any other information or data pertaining to the operation of the bore, the works and the aquifer.

The licence holder must, if required by the Authority, cease taking water entirely, or cease taking water for a given period, or reduce the quantity of water taken during any period if, the Authority reasonably believes, or in accordance with the assessment in a Groundwater Management Plan, the use or disposal of water under this licence may injure or adversely affect any other person or an aquifer or the environment.

The licence holder must, if required by the Authority, enter into a formal agreement to supply water to any party affected by interference from bore operation.

The bore(s) must not be altered or decommissioned without a works licence that authorises alteration, or decommissioning.

The bores(s) must be located at least 50 metres from any bore(s) not operated by the licence holder unless authorised by the Authority.

The bores(s) must be located at least 200 metres from any state observation bores unless authorised by the Authority (Drilling location – distance from SOBN 200m).

11 Appendix 5

Water-Use Licence Condition Sets and Examples of Particular Conditions on Water-Use Licences – In the Victorian Water Register

The relevant parts of the agreed Irrigation and Drainage Plan must ultimately be translated into enforceable conditions on a water-use licence. Similarly, the agreed Works Plan must also be translated into enforceable conditions on a works licence. In that context it is helpful for approval agencies to understand the way that the licensing staff in water corporations go about adding conditions on to each licence that they issue.

The following tables show the ‘condition sets’ that are available to licensing staff inside the Victorian Water Register. These are made available to them from drop down lists as they create each electronic water-use licence or works licence. They are presented here so that approval agencies can think about formulating their recommendations in the vocabulary and syntax that is currently being used to spell out enforceable conditions.

Table 1 shows the Standard Conditions available to all licensing staff. The [] signs in these conditions indicate those parts of the standard conditions where unique numbers, or unique text, can be added to the standard condition to tailor it to a specific Irrigation and Drainage Plan or Works Plan.

Circumstance/Event	Condition
Drainage as per time of trade	Drainage under this water-use licence is subject to the agreed actions, contingency arrangements and other conditions that were put in place at the time that the trade of water entitlement to the property was approved.
Drainage disposal - general (WUL)	Where irrigation results in drainage from the land specified in the licence that drainage water must be disposed in ways that meet with the standards, terms and conditions adopted from time to time by the water authority.
Drainage disposal - drain number (WUL)	Where irrigation results in drainage from the land specified in the licence that drainage water must be disposed in Drain number [insert value].
Drainage disposal - other (WUL)	Where irrigation results in drainage from the land specified in the licence that drainage water must be disposed in [insert value].
No ponded irrigation	Ponded irrigation must not be carried out on the land specified in the licence without the addition of particular conditions governing the use of such an irrigation system.
Ponded irrigation OK	Ponded irrigation may be carried out subject to other relevant conditions.
AUL	Subject to the Minister declaring a seasonal adjustment to annual use limits to accommodate exceptionally high evapotranspiration rates, the maximum number of megalitres of water that may be applied to the land specified in the licence in any 12-month period from 1 July to 30 June will be [insert value].
Use conditions as per time of trade	The use of water under this water-use licence is subject to the agreed actions, contingency arrangements and other conditions that were put in place at the time that the trade of water entitlement to the property was approved.
Conditions same as previous s51	Water use is subject to the same conditions that applied to the use of water under take and use licence No. [insert value].
Meter required (WUL)	Water used for the purposes of irrigation on the land specified in the licence must be measured through a meter approved by a water authority.
Meter may be required (WUL)	Water used for the purposes of irrigation on the land specified in the licence may be applied without a meter.
Salinity managed as per time of trade	The minimisation of salinity under this water-use licence is subject to the agreed actions, contingency arrangements and other conditions that were put in place at the time that the trade of water entitlement to the property was approved.

Continued...

Circumstance/Event	Condition
EC limits - range	Water may only be used for irrigation if its electrical conductivity lies within the range [insert value] and [insert value] EC units.
EC limits - (custom)	Water may only be used for irrigation if its electrical conductivity lies within the range [insert value].
EC limits - IDP	Water may only be used for irrigation if its electrical conductivity lies within the range specified in the endorsed irrigation and drainage plan No. [insert value].
Protection of biodiversity as per time of trade	The protection of biodiversity under this water-use licence is subject to the agreed actions, contingency arrangements and other conditions that were put in place at the time that the trade of water entitlement to the property was approved.
30 day threshold	Thirty days after the corrective action thresholds on this licence are breached, water must no longer be used for the purposes of irrigation on the land specified in the licence unless [insert value].
30 day threshold (use) - unless other	Thirty days after the corrective action thresholds on this licence are breached, water must no longer be used for the purposes of irrigation on the land specified in the licence unless [insert value].
Corrective action (use) - water table soil surface	Unless all the corrective action procedures listed on this licence have been initiated, water may not be used for irrigation if monitoring records indicate that water tables have risen to within [insert value] metres of the soil surface.
Corrective action (use) - water table AHD	Unless all the corrective action procedures listed on this licence have been initiated, water may not be used for irrigation if monitoring records indicate that water tables have risen to [insert value] metres AHD.
Corrective action (use) - salinity	Unless all the corrective action procedures listed on this licence have been initiated, water may not be used for irrigation if monitoring records indicate that groundwater salinity concentrations have reached [insert value] EC.
Corrective action (use) - other	Unless all the corrective action procedures listed on this licence have been initiated, water may not be used for irrigation if monitoring records indicate that [insert value].
Number of monitoring instruments (WUL)	Water may only be used for irrigation if the required monitoring instruments have been properly installed and maintained, the total number of these instruments is [insert value].
Auditing monitoring data (use)	Water may only be used for irrigation while appropriately accredited auditors audit monitoring data [insert value].
Accreditation of auditors (use) - ISO 1400	Water may only be used for irrigation while audits are being duly carried out by auditors with accreditation through ISO 1400.
Accreditation of auditors - other	Water may only be used for irrigation while audits are being duly carried out by auditors with accreditation through [insert value].
Monitoring and correctional req'ts - IDP (WUL)	Water may only be used for irrigation while the licence holder meets the relevant monitoring and correctional requirements with regard to installing and maintaining the monitoring equipment following the specified data reading, recording and auditing requirements; and carrying out the specified corrective action procedures, within the specified time, where a specified threshold for these is breached as specified in the endorsed irrigation and drainage plan No. [insert value].
Posting monitoring data (WUL)	Water may only be used for irrigation while the licence holder posts recorded monitoring data to the Victorian GMS [insert value].
Recording monitoring data (WUL)	Water may only be used for irrigation while the licence holder records monitoring data [insert value].
Drainage disposal - other (WUL)	Where irrigation results in drainage from the land specified in the licence that drainage water must be disposed in [insert value].
EC limits - IDP	Water may only be used for irrigation if its electrical conductivity lies within the range specified in the endorsed irrigation and drainage plan No. [insert value].
Monitoring and correctional req'ts - IDP (WUL)	Water may only be used for irrigation while the licence holder meets the relevant monitoring and correctional requirements with regard to installing and maintaining the monitoring equipment following the specified data reading, recording and auditing requirements; and carrying out the specified corrective action procedures, within the specified time, where a specified threshold for these is breached as specified in the endorsed irrigation and drainage plan No. [insert value].
Number of monitoring instruments (WUL)	Water may only be used for irrigation if the required monitoring instruments have been properly installed and maintained, the total number of these instruments is [insert value].
Conditions same as previous s51	Water use is subject to the same conditions that applied to the use of water under take and use licence No. [insert value].
Conditions same as previous s51	Drainage is subject to the same conditions that applied to the use of water under take and use licence No. [insert value].
Conditions same as previous s51	The minimisation of salinity is subject to the same conditions that applied to the use of water under take and use licence No. [insert value].
Conditions same as previous s51	The protection of biodiversity is subject to the same conditions that applied to the use of water under take and use licence No. [insert value].

Table 2 shows that there is also scope within the water register to add particular conditions if there is a recommendation that cannot be readily accommodated within the standard conditions set. The examples here are intended to provide some insights into the vocabulary and the syntax that has been used elsewhere to create enforceable conditions.

Circumstance/Event	Condition
Conditions same as previous s51	Water used for the purposes of irrigation on the land specified in the licence must not be applied within 200 metres from the high-water mark of the water body identified in the Irrigation and Drainage Plan (IDP).
Special Condition	Unless otherwise directed by the Water Authority irrigation can only occur on the Volume and Folio identified on the Water Use Licence. The remaining Volume and Folios on this Water-Use Licence can only be used for Domestic and Stock purposes.
Hydrogeological Investigation	The licence holder must comply with recommendations contained in the Hydrogeological Investigation of proposed Irrigation Development, specifically: a) The Licence holder must construct and maintain a defined number of groundwater observation/monitoring bores (Piezometers) at locations recommended in the above report. b) Bores must be licenced and comply with requirements contained in the Victorian Mallee Irrigation Development Guidelines, "Standards/Guidelines for Installation and Management of Testwells and Piezometers (Groundwater Monitoring Bores)". c) Standing Water levels must be measured in the first week of June and December each year. d) The Licence holder is to install a meter and measure and record drainage volumes discharged from drains defined in the IDP. A copy of all groundwater monitoring data and recorded drainage volumes obtained must be maintained on site and provided to the Water Authority upon request.
Area to be irrigated	Unless otherwise directed by the Authority the total area permitted for irrigation is identified in the irrigation footprint polygon.
Disposal of drainage water	The licence holder must dispose of subsurface drainage water on-site.
Installation of subsurface drainage	The licence holder must install subsurface drainage at their own cost to an appropriate depth to ensure soil salinisation will not become apparent in the permanent plantings.
Installation of test wells	The licence holder must install at their own cost appropriately sited test wells to ensure depth to any perched groundwater can be monitored and recorded.
Irrigation infrastructure	The licence holder must supply at their own cost infrastructure to irrigate the property via a pre-existing dam which exists in addition to any existing supply from Lower Murray Water.
Irrigation system design	The licence holder must advise the Water Authority of any amendments to the irrigation design as submitted.
Metering	The licence holder must install at their own cost an appropriately sized and Water Authority specified meter for the measuring of irrigation water supplied to the property.
Bore installation and monitoring	The licence holder must comply with recommendations contained in the IDP, specifically a) The Licence Holder must construct and maintain a defined number of shallow monitoring bores to a depth of 2.5 metres b) The bore(s) must be constructed, and where relevant decommissioned, in accordance with the Minimum Construction Requirements for Water Bores in Australia, Edition 3. d) The bore(s) must be altered, and any replacement bore(s) must be constructed, in accordance with the Minimum Construction Requirements for Water Bores in Australia, Edition 3. e) Standing Water levels must be measured in the first week of June and December each year. f) A copy of all groundwater monitoring data and recorded drainage volumes obtained must be maintained on site and provided to the Water Authority upon request.
Native Vegetation Corridors	The licence holder must construct and maintain a defined number of testwells to a depth of 2 metres near nominated soil pits as recommended in the IDP to ensure early detection of perched water tables that may negatively impact on the surrounding native vegetation corridors. These testwells are to be monitored regularly during the irrigation season. a) Testwell construction, installation, and monitoring must comply with requirements contained in the Victorian Mallee Irrigation Development Guidelines, "Standards/Guidelines for Installation and Management of Testwells and Piezometers (Groundwater Monitoring Bores)".

Continued...

12 Appendix 6

Mallee Irrigation Development Guidelines Factsheets/Forms

Fact Sheets / Forms

The following fact sheets/forms are available from the IDC:

1. An overview of the new irrigation development approvals process for the Mallee CMA region
2. Buffers for the protection of biodiversity within irrigation developments in the Victorian Mallee
3. Impacts on Native Vegetation
4. Irrigation and Drainage Plans
5. Protecting Indigenous Cultural Heritage
6. Regional Salinity Impact Zones
7. Overview of Water Use License
8. Hydrogeology
9. Overview of Works Licence
10. Murrayville Groundwater Management Area
11. Parks Victoria Pumping Infrastructure and Associated Works Assessment Sheet
12. Parks Victoria Guidelines for Infrastructure and Works on or across Parks Victoria Owned/Managed land

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Notes

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