

Victorian Mallee Irrigation Development Guidelines 2024



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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Contents

Acronyms in this document 3

Glossary of terms 4

1	Introduction	6
1.1	Purpose	6
1.2	Process for recommendation and approval	7
1.3	Water use licences	8
1.4	Take and Use Licences (T&UL)	9
1.5	Works Licences (WL)	9
1.6	When the guidelines do not apply	10
1.7	Review of the guidelines	11

2	Irrigation Development Assessment Process	12
2.1	General overview	12
2.2	Application response times	12
2.3	Costs associated with the processing of applications	13
2.4	Complaints process	13
2.5	Appeals process	13

3	Roles and Responsibilities	24
3.1	The applicant	24
3.2	Irrigation Development Group	25
3.3	Irrigation Development Coordinator (IDC)	25
3.4	Water Corporations	26
3.5	Department of Energy, Environment and Climate Action (DEECA)	27
3.6	Mallee Catchment Management Authority (CMA)	27
3.7	Local Government	28
3.8	Parks Victoria	28
3.9	Registered Aboriginal Parties - First Peoples - State Relations	28

4	Information requirements and technical assessments	29
4.1	Preliminary risk assessment	29
4.2	Public land manager consent	31
4.3	Works plan to inform the works licence	31
4.4	Irrigation and drainage plan that informs the Water Use Licence or Take and Use Licence	32
4.5	Peer reviews	41
4.6	Further information	41

5	Other approvals required for irrigation development	42
5.1	Overview	42
5.2	Aboriginal Heritage (<i>Aboriginal Heritage Act 2006</i> & Aboriginal Heritage Regulations 2018)	42
5.3	Public land manager consent (<i>National Parks Act 1975</i> & <i>Crown Land Reserves Act 1978</i>)	44
5.4	Local council requirements (<i>Planning and Environmental Act 1987</i>)	44
5.5	Planning permits	45
5.6	River Murray and NSW approvals	47
5.7	Environmental protection and biodiversity conservation	47

5.8	Flora and fauna conservation	47
5.9	<i>Environment Effects Act 1978</i>	48
5.10	Wildlife protection and conservation	48
5.11	Floodplain management and works on waterways	49

6	References	50
----------	-------------------	-----------

7	Appendix 1: Legislative Framework and Mallee Regional Catchment Strategy Context	51
7.1	Overall framework	51
7.2	<i>Victorian Water Act 1989</i>	51
7.3	<i>Catchment and Land Protection Act (CALP) 1994</i>	56

8	Appendix 2: Victorian Mallee Irrigation Development Group - Terms of Reference	58
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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	62
9.1	Annual use limits on WUL	62
9.2	Process for determining applications for issuing AUL using MARS above Schedule 2	62

10	Appendix 4: Works License Condition Sets - available in the Victorian Water Register	64
	Works on waterways	64
	Works associated with works on a waterway	68
	Bore construction and operation	70

11	Appendix 5: Water-Use Licence Condition Sets and examples of particular conditions on Water-Use Licences – available in the Victorian Water Register	74
-----------	---	-----------

12	Appendix 6: Mallee Irrigation Development Guidelines Factsheets/Forms	77
-----------	--	-----------

13	Appendix 7: Extended list of MAR for crop types not specified in Schedule 2	78
-----------	--	-----------

14	Appendix 8: Standard soil mapping units	79
-----------	--	-----------

15	Appendix 9: Links to technical resources	80
-----------	---	-----------

16	Appendix 10: Take and use licences	82
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Acronyms in this document

AgVic	Agriculture Victoria (within DEECA)	LWMP	Land and Water Management Plan
AHD	Australian Height Datum	MAR	Maximum Application Rate
AUL	Annual Use Limit	MDBA	Murray-Darling Basin Authority
BSM2030	Basin Salinity Management 2030	ML	Megalitre
CHMP	Cultural Heritage Management Plan	NRE	Natural Resources and Environment (Department of, now part of DEECA)
CMA	Catchment Management Authority	NRSWS	Northern Region Sustainable Water Strategy
DSE	Department of Sustainability and Environment (Now part of DEECA)	PEA	Planning & Environment Assessment
DEECA	Department of Energy, Environment and Climate Action	PLM	Public Land Manager
DELWP	Department of Environment, Land Water and Planning (Now part of DEECA)	PV	Parks Victoria
EC	Electrical Conductivity	RAP	Registered Aboriginal Party
FPSR	First Peoples State Relations	RCS	Regional Catchment Strategy
GMW	Goulburn-Murray Water	SIZ	Salinity Impact Zone
GPT	General Place of Take	SMP	Salinity Management Plan
GWMW	Grampians-Wimmera Mallee Water	T&UL	Take and Use Licence
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	WL	Works Licence
IDC	Irrigation Development Coordinator	WP	Works Plan
IDG	Irrigation Development Guidelines	WUL	Water Use Licence
IDP	Irrigation and Drainage Plan		
LIZ	Low Impact Zone		
LMW	Lower Murray Water		

Glossary of terms

Allocation account

An account to keep track of water available for use or trade. This account records allocations made against entitlements throughout the irrigation season, as well as water trades and use. The allocation account is sometimes referred to as an ABA as shorthand for allocation bank account. However, the word 'bank' isn't used widely anymore, as it was confused with financial banks.

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

Extraction share is the common term used to refer to 'notional rationing rate' as defined in section 3(1) of the *Water Act 1989*. It is the share of water that a river diverter can take from a declared system when river delivery restrictions (or shortfalls) are in effect. Water users in irrigation districts do not need extraction share

because their delivery share determines their right to take a share of water in the river during delivery restrictions. Extraction share is expressed as a rate in megalitres per day on a river diverter's general place of take approval. Extraction share does not constrain the take of water during normal flow periods.

General place of take approval (GPT)

Authorises a person to take of water, under their relevant water allocations, from a place (defined by a service point) in a declared water system. For river diverters, the GPT includes the holder's extraction share.

Groundwater

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

Habitat zone

A discrete area of native vegetation consisting of a single vegetation type (EVC) with an assumed similar averaged quality. This is the base spatial unit for conducting a habitat hectare assessment.

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.

Hydraulic loading

The impact that additional irrigation water application may have on the local water table behaviour.

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. Common MAR are defined in Schedule 2 of Standard Water Use Conditions, while Appendix 8 is an extended list of MAR for crop types that are not defined in the Schedule adopted as DEECA policy in 2018.

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.

Patch

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, or a mapped wetland.

Perched water table

Water table in unsaturated sub-surface profile caused by presence of an impervious layer preventing downward leakage.

Place of take approval

Every allocation account holder with an approval to take water from a declared system automatically received a general place of take approval (GPT) for each place they take water (i.e. each service point). The GPT maintains their rights to take water. Every river diverter has an extraction share value recorded on their GPT.

Pumped Irrigation Districts

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

Regional water table

Generally describes the groundwater processes that manifest as local impacts but have much broader origin.

Revegetated buffer

A previously cleared area that has been revegetated with suitable native species.

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.

Scattered tree

A native canopy tree, that does not form part of a patch, inclusive of dead standing trees with a Diameter at Breast Height (DBH) of 40cm or 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 licences 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 that 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 works licence, and a water use licence. The term unbundling refers to the separation of water entitlements from land (30 June 2007).

Unvegetated buffer

An area lacking any native remnant vegetation as a result of clearing.

Water Corporations

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 Mallee Irrigation Development Guidelines

1.1 Purpose

The Victorian Mallee Irrigation Development Guidelines (the Guidelines) provide guidance for government agencies to process applications for 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 developers.

Inter-agency co-operation is integral to the assessment and approval process. This is undertaken by the Irrigation Development (ID) Group, which is made up of representatives from the Water Corporations, Department of Energy, Environment and Climate Action (DEECA) (including Agriculture Victoria (AgVic)), the Mallee Catchment Management Authority (CMA) and Parks Victoria (PV). The ID Group is also supported by First Peoples – State Relations (FPSR) on matters of relevance.

An Irrigation Development Coordinator (IDC) from AgVic within DEECA coordinates the ID Group, which generally meets on a monthly basis to discuss new applications and relevant issues.



1.2 Process for recommendation and approval

The Guidelines provide a process for the irrigation development proposal to be coordinated. When the ID Group is satisfied that the proposal meets the legislative requirements and is consistent with the Guidelines, the group makes a recommendation that the Water Corporation endorse any Works Plan (WP) and/or Irrigation and Drainage Plan (IDP) associated with an irrigation development proposal, and may also recommend site specific conditions, for a Works Licence (WL), Take and Use Licence (T&UL) and or a Water Use Licence (WUL). The decision maker (Water Corporation) and applicant are then notified of the ID Group recommendation.

Before issuing a WL, T&UL, 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 removal regulations, public land manager's consent and planning permits can be finalised after the WL, T&UL and/or WUL are issued. Water Corporations generally will not issue a WL, T&UL, or WUL while another referral authority is still fulfilling its statutory requirements in considering other relevant approvals.

However, a Water Corporation may issue a licence before another permit is granted, if, for example, another referral authority has advised that it does not want the permitted action (such as native vegetation removal) to take place unless the proposed irrigation development actually proceeds. 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 recommending licence conditions and the endorsement of irrigation development plans, 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 that it meets 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, WUL, T&UL or WL.

1.3 Water use licences (WUL)

The Guidelines apply to previously unirrigated land for which there is no existing water-use licence. In issuing a new WUL 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 WUL 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.

The question regarding proposed volume being agreed to can be answered by a reference to the maximum application rates (specified in Schedule 2 of the Ministerial Determinations of Standard Water Use Conditions and Appendix 8).

When a change in irrigation infrastructure occurs, it may trigger the works approval process for a new or amended works licence.

Note that applications for general place of take approvals (GPTs) are incorporated into WUL and WL applications when required. The Guidelines do not provide specific advice regarding GPT requirements or applications or require a river diverter to hold extraction share on their GPT(s). However, applicants should be aware of their delivery risks and have plans in place to comply with delivery restrictions. More information about GPTs and extraction share rules is available at Place of take approvals - Water Register.

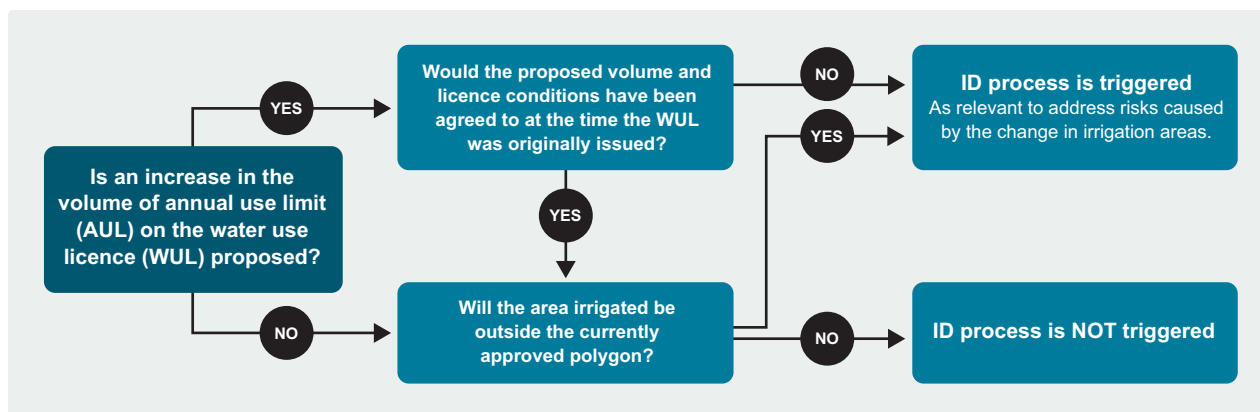


Figure 1-1 | Decision tree to determine when the Irrigation Development Guidelines are triggered for an existing WUL or T&UL.

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 Groundwater Management Area (GMA) and apply to Grampians Wimmera Mallee Water (GWMW) customers. More information is available in the Mallee Irrigation Development Guidelines Murrayville Groundwater Management Area Fact Sheet available from the IDC.

LMW also administers a limited number of T&UL.

The development application process follows the same steps as those undertaken for WULs, and it 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 is not permitted from any groundwater system which is interlinked with the Murray River surface water system (within the Murray trench). The Murray River is a declared water system and any irrigation from declared water systems require a WUL to be issued, as opposed to a T&UL.

1.5 Works Licences (WL)

The Guidelines are used to coordinate WL applications and consider the appropriate standard conditions, 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 WL 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.



1.6 When the guidelines do not apply

The ID assessment process for WULs will not be initiated:

- When the sale of land, land subdivision or land consolidation requires the issuing of a new WUL or T&UL on land already being irrigated, provided there is no net increase in the AUL and no 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 or T&UL is not exceeded or increased above the maximum application rates. Note that the approved polygon in irrigation districts typically corresponds to the property boundary.

The requirement to prepare IDPs for new or varied WULs or T&ULs will not apply in the following circumstances:

- Where a WUL or T&UL 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 land already covered by a licence, and where that increase would result in an AUL that is below the maximum application rates.

An application for a WL being renewed, amended, or transferred may not require the preparation of a Works Plan if the Water Corporation deems that the WL does not have significant deficiencies or amendments.

Except for Cultural Heritage requirements, the issuing of a WUL, T&UL or WL cannot be withheld based on the requirements of other Acts of Parliament. However, Water Corporations generally will not issue a WL, T&UL, or WUL while another referral authority is still fulfilling its statutory requirements in considering other relevant approvals. It is important for applicants to be aware that the proposed developments may not proceed without first obtaining all necessary approvals (DSE, 2010). Nonetheless, a Water Corporation may issue a licence before another permit is granted, if, for example, another referral authority has advised that it does not want the permitted action (such as native vegetation removal) to take place unless the proposed irrigation development actually proceeds.



1.7 Review of 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, GWMW and LMW), DEECA (including AgVic), Local Government Authorities, Traditional Owners and Community and Industry Groups. The revised document is endorsed by Water Corporations, the Mallee CMA and DEECA (including AgVic).

The Guidelines may be amended within this timeframe to improve clarity and accuracy; editorial changes do not require broad consultation or separate agency signoff, provided they are 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, AgVic located at Irymple.

It is important to note that the Guidelines reflect the government legislation, regulations, and policies that were in force at the time of writing. Those legal instruments are subject to change without notice, and where there is any inconsistency between the Guidelines and those instruments, current legislation, regulations, and policy will prevail.

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 or endorse irrigation developments; its role is to review proposals, to assess the risk and complexity associated with the proposal, to coordinate responses by referral authorities, to recommend conditions to manage risk and if IDPs have been completed to the required standard and risks can be adequately managed, to recommend that the relevant water corporation endorse the plan.

The level of information requested from the applicant and other requirements are dependent upon the complexity and level of potential risk identified for

the proposed development. For example, where a proposed development presents high levels of risk to the environment through groundwater rise, native vegetation removal, or large scale land use changes, the applicant 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.

The 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 28 day (business days) response time from the time they receive or are referred 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, T&UL 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 no fees associated with the ID Group assessment process. However, costs associated with the provision of information required to complete an application, including any peer reviews required, will be borne by the applicant.

2.4 Complaints process

If an applicant is dissatisfied with the handling of their application during the process, it will be considered a complaint and managed in the following way: the applicant will first request an appointment to meet and discuss their complaint with the IDC. If the complaint is

still not resolved, the applicant can then write to the Chief Executive Officer (CEO) of the Mallee CMA to seek a review of the process. The CEO may refer the issue to an independent arbiter.

2.5 Appeals process

If an applicant is dissatisfied with any statutory decisions and /or conditions attached to a decision, it will be considered for appeal and managed in the following way: an appeal must be lodged with the relevant statutory authority in accordance with their appeals process. If the grievance is still not resolved where the relevant

legislation allows for an appeal to be lodged, the applicant may lodge an appeal to the Victorian Civil and Administrative Tribunal (VCAT). VCAT deals with disputes between people and government (State/Local) bodies about planning and land valuation, licences to carry on a business and many other Government decisions.

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	Applicant	Applicant initiates contact with agencies. Initial contact can be made by a potential applicant via several different avenues including Water Corporation, Mallee CMA, Local Council, Mildura Regional Development (MRD), AgVic etc. Agencies are encouraged to refer the enquiry directly to the IDC by providing the 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. Exceptions are where formal notification or requests must be made by the Minister's delegate (Water Corporation) or referral agencies directly. Other than these circumstances, the IDC can guide the applicant through the process and identify the responsible agency at each step.
	2	AgVic	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 IDA form.
	3	Applicant	Applicant completes IDA form including preliminary map. 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 as an irrigation development proposal. On receipt, the IDC will: generate a project number; create an electronic 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	AgVic	IDC consults with Water Corporation to determine if ID assessment process is triggered. (Note applicant may already have done this step, but it is important for IDC to confirm).
	5	Water Corporation	Water Corporation to determine if the IDGs are triggered. If the Water Corporation determines the ID assessment process is triggered, then the Water Corporation advises applicant and IDC and process continues to the next step. If not, then the Water Corporation deals with the proposal outside of ID co-ordinated assessment process. Water corporation to advise on water delivery risks In Irrigation districts the Water Corporation determine if there are any Delivery Share constraints and advise applicant of delivery infrastructure requirements. For river diverters, the Water Corporation will advise on any delivery risks and provide information about GPT requirements and application processes.
	6	AgVic	The investigation phase marks the start of the ID process. It commences with the registration of the development activity and contacting the relevant government agencies. Information is gathered to inform preliminary assessments that will identify early any pre-existing issues that may influence the outcome of the application process. IDC organises completion of: Preliminary desktop assessment – 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. Site visit – The IDC will coordinate a site visit with the applicant in order to determine/identify any early issues that may influence on the type and level of information required to be presented by the applicant. Preliminary application risk assessment – A preliminary risk assessment is undertaken for early identification of proposal that have high or very high risks in meeting the Ministerial Water Use Objectives. This will include a 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 4.4.2). 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; preliminary risk assessment including 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 risk assessment including the preliminary hydrogeological assessment, will be presented to the ID Group by the IDC. 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 Group (via the IDC) may advise the applicant to rectify/address the issue before the application is progressed to the next phase of the process. In some instances, these issues may be considered to be 'showstoppers' to the formal application process, preventing the IDA from advancing to the approval stage.
		AgVic	IDC advises applicant of cultural heritage obligations and recommends the engagement of a cultural heritage adviser.

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	6	DEECA PEA / NEP	IDC asks applicant to contact DEECA Planning and Environment Assessment (PEA) regarding PLM consent (if a WL proposal involves Crown Land) and native vegetation pre-plan assessment (for all proposals) Applicant contacts DEECA PEA to receive preliminary advice regarding whether Parks Victoria (PV) or DEECA is the public land manager (PLM) to issue PLM consent to apply for planning permit and Landowners Consent (LOC) to occupy Crown Land. Early consultation with the DEECA PEA 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. Applicant contacts DEECA PEA regarding pre-plan assessment for native vegetation. An important reminder for the applicant at this stage is that under no circumstances should native vegetation be removed before the relevant WUL T&UL and/or WL is issued, and a planning permit application has been approved (where required). Even where approval for native vegetation removal is received from the relevant authority prior to the WUL, T&UL and/or WL being issued.
		PLM (for WL involving Crown Land)	PLM (PV or DEECA) undertakes a preliminary assessment Where a proposal involves Crown Land, the relevant PLM (PV or DEECA) reviews preliminary information at this stage, considers any potential pre-existing issues and advises on likely requirements to obtain LOC to occupy Crown Land.
	7	AgVic	Feedback from authorities/ agencies provided to IDC who organises an ID Group Pre-plan meeting.
		AgVic	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 The IDC also advises the applicant to submit a formal application for a WUL, T&UL and/or WL to the relevant Water Corporation at this stage. The applicant should make contact with the relevant Water Corporation to confirm requirements. Forms 23 "Water Use Licences", Form 29 "Issue of a Works Licence" and/or Form 31 "Variation to an Existing Licence" can be downloaded from the Victorian Water Register website. Each Water Corporation has their own forms for T&UL. Preliminary information requirements The IDC incorporates the feedback provided by the ID Group meeting and the results of the preliminary risk assessments 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, may have legal and/or financial consequences (such as native vegetation removal) and is done at their own risk/expense (including any rework required to align with the required conditions). 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. 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 (WP) and the WP must demonstrate how the risks associated with construction and ongoing operation of the infrastructure will be mitigated. It is important to explain to the applicant the sequencing of these approvals as described below. 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: 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 and/or T&UL. 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.

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
INVESTIGATION PHASE	7	AgVic	Water use activities: Irrigation Drainage Plan (IDP for a WUL or T&UL). Before water is able to be delivered to the property a WUL or a T&UL 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 or T&UL is approved is not recommended and is at the risk of the applicant/ landowner. The information requirements for an IDP may include: - Soil survey; independently reviewed by the AgVic 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. 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. During this step DEECA NEP will also provide technical advice regarding the protection of biodiversity, by taking into consideration all the reports mentioned above. 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 and biodiversity values. 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. 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. 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 assessment by the ID Group.
	8	Applicant	Applicant collates requested information to prepare IDP and WP and opens formal application with Water Corporation Applicant contacts the relevant Water Corporation to confirm requirements for submitting a formal application for a WUL, T&UL, and/or WL. Application forms Form 23 "Water Use Licences", Form 29 "Issue of a Works Licence", Form 31 "Variation to an Existing Licence" and Form 16 "Transfer Extraction Share" are downloaded as required from the Victorian Water Register (VWR), completed, and provided to the Water Corporation along with any other relevant forms as required.
			WATER CORPORATION LODGES THE APPLICATION(S) IN THE VWR AND THE APPLICATION(S) ARE MARKED AS WITH APPLICANT UNTIL PRESCRIBED INFORMATION IS SUBMITTED
ASSESSMENT PHASE	9	Applicant	Applicant completes Draft IDP and provides to Water Corporation to distribute to relevant agencies.
		Applicant	Applicant completes Draft WP and provides to the Water Corporation to distribute to relevant agencies.
		Applicant	Applicant contacts local government for information needed for a planning permit.
	10		APPLICATION IS WITH WATER CORPORATION
		Water Corporation	Water Corporation distributes licence application and prescribed information (draft IDP, WP and/or supporting information) to referral agencies.
			APPLICATION IS WITH REFERRAL AGENCIES
		Water Corporation	Water Corporation checks designs are completed by suitable qualified and experienced designers, and meets water corporation delivery capacities.
		Mallee CMA (As ID Group)	ID Group coordinate checks. ID Group checks hydrogeology is completed by suitable qualified and experienced person and is undertaken according to understanding of risk.

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
ASSESSMENT PHASE	10	DEECA PEA / NEP	DEECA PEA / NEP checks: - Native vegetation investigation and offset plan - Biodiversity buffers - Other environmental legislation requirements (including potential triggers / permit requirements for the removal of native vegetation under the <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) The WP must demonstrate how the risks associated with construction and ongoing operation of the infrastructure will be mitigated.
		PLM (for WL involving Crown Land)	Relevant PLM checks: - Public Land Manager / Landowner consent requirements - Parks Victoria Act (where applicable) The WP must demonstrate how the risks associated with construction and ongoing operation of the infrastructure will be mitigated.
		First Peoples State Relations	First Peoples State Relations or Registered Aboriginal Party checks Cultural Heritage assessments as required e.g.: - Cultural Heritage and Native Title - Cultural Heritage Management Plan or Cultural Heritage permit
		Local Government	Local Government advises planning permit requirements.
		Other	Relevant authorities check: - Overarching approvals related to property developments. Other assessments as required: - Parks Victoria Act - Power - Road crossings River Murray and NSW
		AgVic	- Review soil survey, irrigation design, monitoring recommendations - Interviews and investigations with AgVic Soil Surveyor, Irrigation Designer and Hydrogeologist
	11	Referral agencies advise Water Corporation if more information is required from the applicant. APPLICATION IS WITH WATER CORPORATION	
		Water Corporation	Water Corporation requests more information from the applicant.
		APPLICATION IS WITH APPLICANT	
		Applicant	Develops Revised Works Plan (WP), which is lodged by the applicant with the Water Corporation.
		Applicant	Develops Revised Irrigation and Drainage Plan (IDP), which is lodged by the applicant with the Water Corporation.
	12	APPLICATION IS WITH WATER CORPORATION	
		Water Corporation	Revised IDP and/or WP is circulated to ID Group for Review and consideration against Ministerial Objectives and Guidelines.
		APPLICATION IS WITH REFERRAL AGENCIES	
		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 WP and/or an IDP. The revised plans are submitted by the applicant to the Water Corporation and then circulated to the ID Group for review. The ID Group should be satisfied that all relevant approvals will be obtained and the complete IDP will meet the requirements of Minister's policies and the IDG before recommending that the Water Corporation endorse the IDP. The process for reviewing these Plans is outlined below: - The WP and/or IDP is submitted by the applicant to the Water Corporation and then circulated to the ID Group for review - 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. - If the level of information is not sufficient or further information is requested by any referral authority, the relevant referral authority will advise the Water Corporation to request the required additional information from the applicant. - If the risks identified by the assessments are deemed too great and therefore the proposal is not supported by one or more referral authority, the relevant referral authority will recommend to the Water Corporation that the application be rejected subject to receiving formal advice from the referral authority that there is no reasonable possibility of gaining the necessary approvals.

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	12	First Peoples State Relations	First Peoples State Relations or Registered Aboriginal Party consider whether required approvals processes for property developments are / will be put in place Completed assessments to be considered include: - Cultural Heritage Management Plan/ Permits and requirements - Native Title notification.
		Other	Relevant authorities consider whether overarching approval processes related to property developments are / will all be put in place. Completed assessments to be considered include (but are not limited to): - Flora and Fauna Guarantee Act permit for protected flora - Planning Permit for works and/or removal of native vegetation. - Parks Victoria Act - Power - Road crossings - River Murray and NSW.
		DEECA PEA / NEP	DEECA PEA / NEP considers whether application has met requirements of: - Flora and Fauna Guarantee Act - Conservation Act - Native vegetation offsets and biodiversity buffers - Other environmental legislation requirements (including potential triggers / permit requirements for the removal of native vegetation under the Environment Effects Act, Environment Protection and Biodiversity Conservation Act and Flora and Fauna Guarantee Act impacts on protected flora).
		PLM	PLM considers whether to endorse application for consent to apply for a Planning permit. Once PLM (PV or DEECA) is satisfied that all risks have been adequately addressed by the applicant, PLM consent to occupy the land is issued and the applicant has three weeks 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.
		Applicant	Applicant obtains necessary approvals for checking and resubmits the licence application to IDC.
		Local Government	Local Government considers whether to approve planning permit.
	13	Referral agencies advise Water Corporation whether: a) There is no reasonable possibility of the applicant gaining the necessary approvals; b) More information is required, or; c) That all relevant approvals will be obtained (may be subject to conditions) APPLICATION IS WITH WATER CORPORATION	
	14 a)	Water Corporation	Water corporation requests more information from applicant and advises ID Group.
		Applicant	Applicant responds to other agencies information requirements and amendments and obtains necessary consents and approvals (e.g. CHMP).
	14 b)	Water Corporation	Water Corporation rejects applications and informs applicant and ID Group of rejection including reasons.
		Applicant	Applicant is advised of application outcomes.
	14 c)	Applicant	Applicant obtains necessary approvals (CHMP) and required consents for checking.
		Water Corporation	Water Corporation distributes application to IDC for final checks.
	15	AgVic	IDC checks that the ID Group is satisfied that all relevant approvals will be obtained and the complete IDP and/or WP will meet the requirements of the Minister's policies relevant to WUL, T&UL and WL and the IDGs.

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
LICENSING PHASE	16	Mallee CMA (As ID Group)	ID Group: Provide final recommendation to Water Corporation regarding endorsement of FINAL IDP and any site specific conditions. The Water Corporation, considering the advice of the ID Group, determine any site specific conditions that are appropriate for each WL or WUL based on the information provided by the applicant and as a result of the investigation and assessment phase. These conditions set out the specific parameters within which the applicant must operate when irrigating under the WL and /or WUL. At times the ID Group may seek expert external advice to formulate suitable recommendations for licence conditions. Works Licence Conditions. 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 7.2.5 – Policies for Managing Works Licences). These conditions must be consistent with and refer to the contents of the WP, management plan, dam safety surveillance plan, dam safety emergency management plan or other relevant (and referenced) document. The conditions on a works licence will address: • 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). Water Register standard conditions are provided in Appendix 4. This should provide guidance to the IDC and ID Group on what can be recommended. Water Use Licence and Take and Use Licence Conditions. Standard and site specific conditions for the a WUL or T&UL may be applied to a licence to meet the Ministerial Water Use Objectives that are consistent with, and in reference to, the contents of the IDP (refer to Appendix 4 and Appendix 10). The Standard Conditions on a WUL or T&UL will address any risks identified including: • 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. The preliminary risk assessment and hydrogeological assessment (step 6), can help to identify appropriate conditions according to potential risk factors, taking into any subsequent mitigations incorporated into the proposal subsequent to these preliminary assessments. Take and Use Licence Conditions. Site specific or special conditions include but are not limited to: The annual water use limit (AUL) for any season; and requirements that govern the use of ponded irrigation including the adoption of biodiversity buffers. For more information, refer to the Standard Water Use Conditions (for WULs) and Schedule 2: Standard Conditions for Take and Use Licences of the Policies for Managing Take and Use Licences. 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 Water Act 1989. 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 water use 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.
	17	AgVic	IDC provides: the applicant with a letter (copy to Water Corporation) recommending that the IDP be endorsed subject to any recommended site specific conditions (using standard VWR conditions wherever possible).
	18	APPLICATION IS WITH WATER CORPORATION	
		Water Corporation	Water Corporation determines outcome of licence application pending finalisation.
	19	Applicant	Applicant confirms they have in place all necessary endorsements and consents subject to specified conditions.
	20	Water Corporation	Minister or Minister's delegate issues a works licence and water use licence when all necessary assessments and approvals are obtained. The Water Corporation notifies the IDC: ▪ When the application has been approved; and, ▪ When the licence has been issued, and supplies the licence number as recorded in the VWR.
		APPLICATION OUTCOME REACHED	
	21	AgVic	IDC records the licence number recorded in the VWR, completes the checklist and closes the project file.

2 Irrigation development assessment process

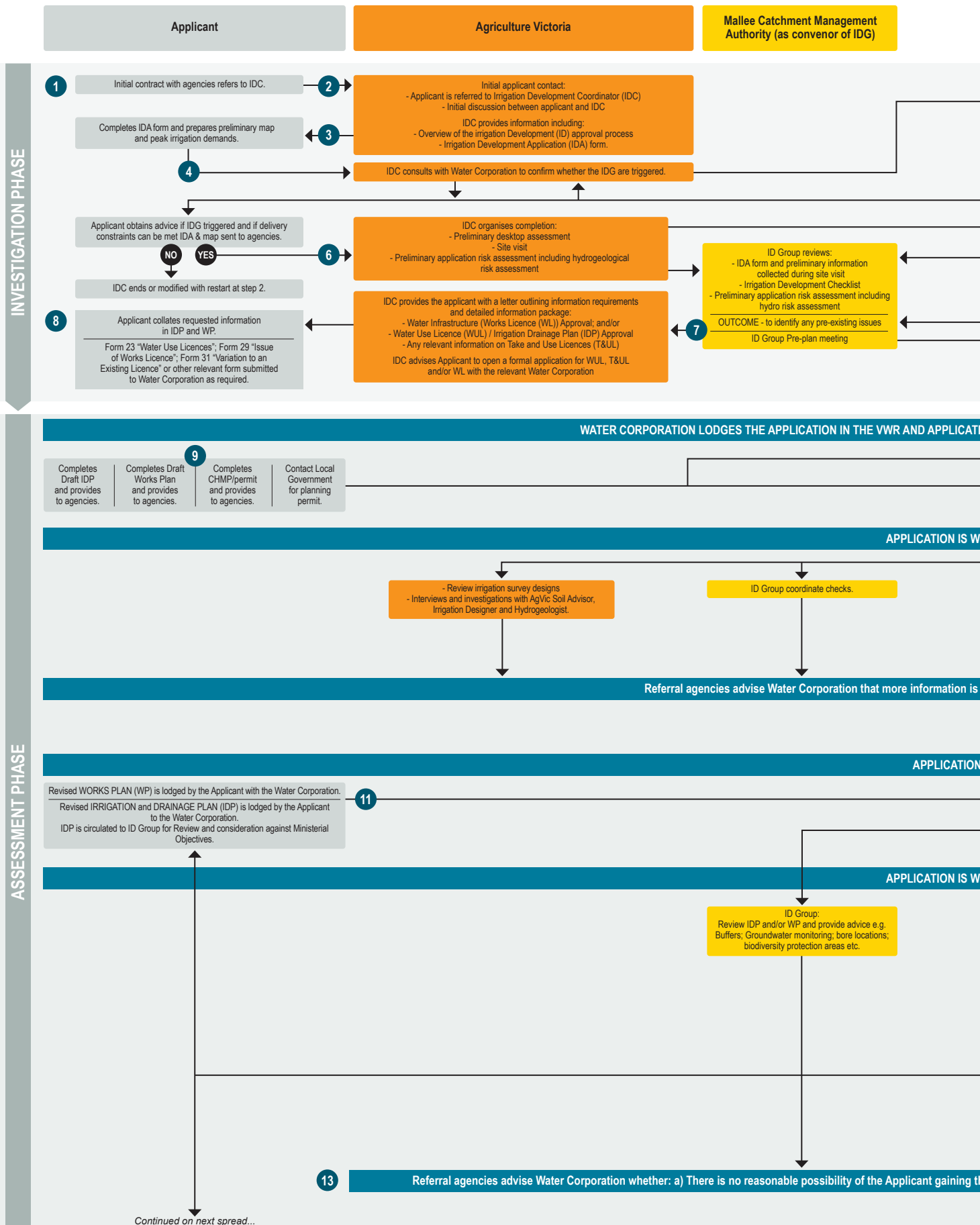


Figure 2-1 | Mallee Irrigation Development Assessment Process. Continued...

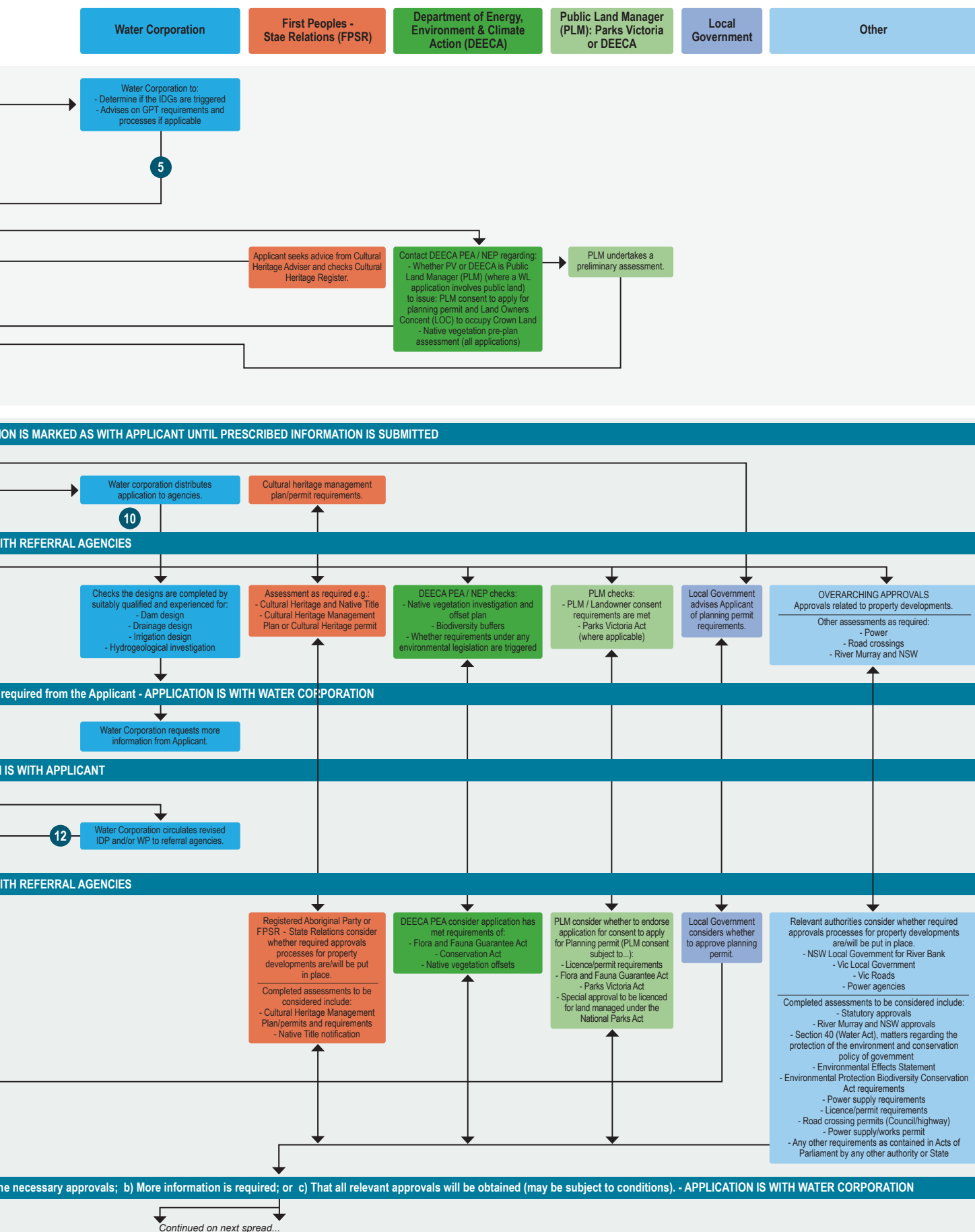


Figure 2-1 | Mallee Irrigation Development Assessment Process. *Continued...*

2 Irrigation development assessment process

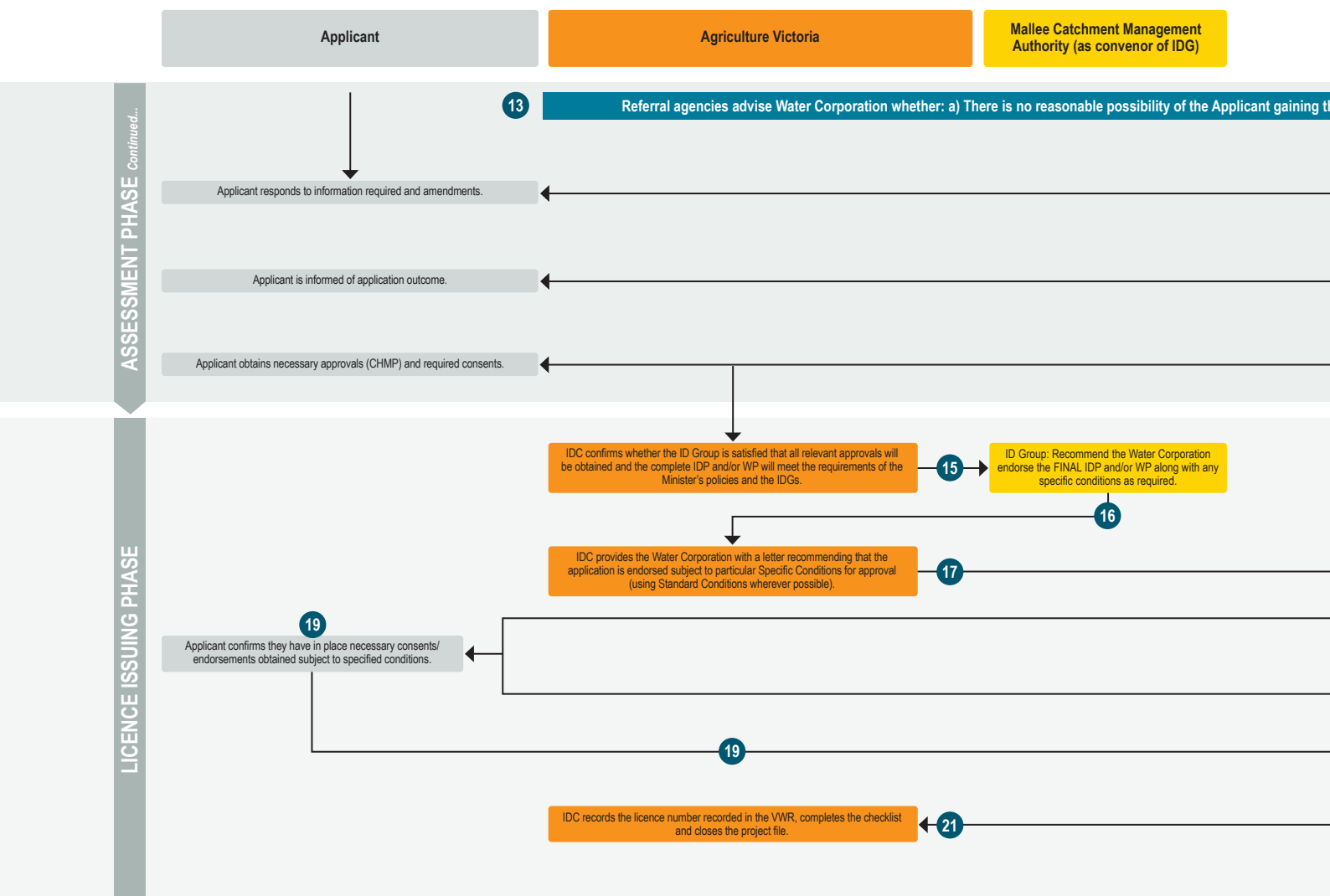


Figure 2-1 | Mallee Irrigation Development Assessment Process.

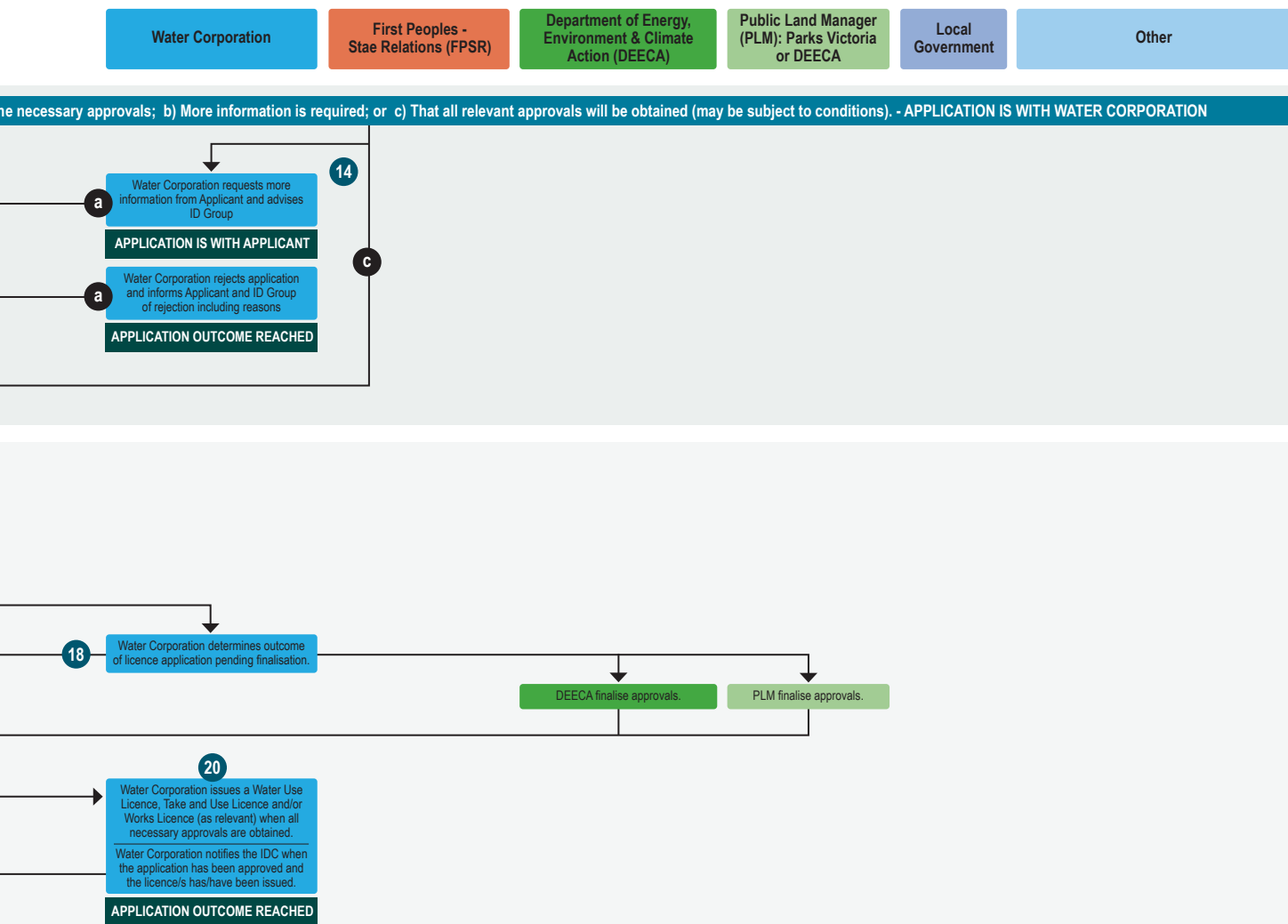


Figure 2-1 | Mallee Irrigation Development Assessment Process.



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 the Guidelines. The applicant:

- Is defined in the 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*.

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.



Crop inspection, Irymple.



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 to ensure that applications for all relevant licences, authorisations and permissions are accompanied by the necessary documents and information.

The ID Group:

- 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 the Guidelines
- Ensures irrigation development applications are processed in a timely manner and cost-effectively
- Provides advice to Water Corporations on whether IDPs and WPs should be endorsed
- Provides advice to Water Corporations in formulating conditions on WUL, T&UL and WL
- 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 the 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 (AgVic)
- Water Corporations (LMW, GMW, GMMW)
- Planning and Environment Assessment, Water and Catchments and Natural Environment Program (DEECA)
- Soils Advisor (AgVic)
- Salinity and Irrigation (Mallee CMA).

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

- First Peoples – State Relations
- First People of the Millewa-Mallee Aboriginal Corporation (FPMMAC)
- Parks Victoria.

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 applicants and referral authorities with preliminary feedback on 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 the Guidelines in a timely manner
- Convening and chairing the inter-agency ID Group meetings in order to ensure that all matters relevant to 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 (Water Corporations) are responsible for the issue of WULs, T&ULs and WLs in accordance with the Victorian *Water Act 1989* and associated Ministerial Determinations. They are also responsible for the issue of GPTs and approving transfers of extraction share in line with Ministerial Rules. A Water Corporation may not approve the issue of a WUL, T&UL, WL, GPT and/or transfer of extraction share 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 the 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
- Follow the Ministerial Rules for Managing General Place of Take Approvals (November 2023), including in relation to applications to transfer extraction share
- 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 WUL, T&UL and/or WL after consultation with the required agencies: Mallee CMA, DEECA, AgVic, 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 licence has been issued, along with WUL, T&UL and WL number as recorded in the Victorian Water Register. A copy of the licence / conditions to be provided to relevant stakeholder agencies with regulatory interest.



Murray River, Yelta.

3.5 Department of Energy, Environment and Climate Action (DEECA)

3.5.1 Planning and Environment Assessment

DEECA – Planning and Environment Assessment (PEA) is a referral authority for advising Local Government on native vegetation and Crown Land issues through the planning permit application process. DEECA PEA works together with DEECA Natural Environment Program (NEP) in assessing impacts on biodiversity including native vegetation removal, and buffers.

It is also responsible for issuing public land manager's consent to allow applicants to apply for a planning permit. It has a role in identifying the appropriate public land manager (PV or DEECA) and coordinating a joint response to applicants on behalf of PV and DEECA as public land managers.

The DEECA PEA 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 DEECA NEP, provide advice on any relevant biodiversity impacts, protection arrangements and native vegetation offset requirements (should removal of native vegetation be permitted)
- Refuse consent to works on Crown Land or may object to planning permits.

3.5.2 Water and Catchments Group

DEECA – 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 AgVic 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 rules, policies and administrative requirements.

3.5.3 Agriculture Victoria (AgVic)

The IDC role is performed by a member of Agriculture Victoria (AgVic) within DEECA.

In addition, the AgVic Soils Advisor provides advice to the Water Corporations on the technical aspect of IDPs, including:

- Reviewing 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 AgVic 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
- Providing, where relevant, information on irrigation best management practices and soil amelioration strategies.

3.6 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, DEECA 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 responsible for administering applications and issuing permits for Works on Waterways for works and activities on or over the bed and banks of Designated

Waterways in accordance with the *Water Act 1989* and CMA Waterway Protection By-laws. Works and/or activities requiring a permit may include access crossings, services/utility crossings, stormwater outlets, stabilisation works, vegetation and debris removal, sand and gravel extraction

- 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.

3.7 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.

3.8 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*.

3.9 Registered Aboriginal Parties - First Peoples - State Relations

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 DEECA Secretary (that is, First Peoples – State Relations) will assess an application for approval of a CHMP.

As of June 2019, there are two RAPs relevant to the 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 (FPMMAC) 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.

4 Information requirements and technical assessments

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

4.1 Preliminary Risk Assessment

During the investigation phase, a preliminary risk assessment is undertaken by the IDC in consultation with the ID Group to determine whether the proposal is likely to have medium, high or very high risks in meeting the Ministerial Water Use Objectives. The risk assessment framework provided in Table 4-1 and Table 4-2 is intended to provide guidance for the IDC to identify proposals that have high or very high risks in meeting the Ministerial Water Use Objectives.

The Ministerial Water Use Objectives are:

- **Managing groundwater infiltration** – To limit infiltration to groundwater systems arising from irrigation so as to minimise or avoid waterlogging, land salinisation, water salinisation and groundwater pollution.
- **Managing disposal of drainage** – To control the disposal of drainage water from irrigation so as to minimise or avoid waterlogging salinising or eutrophying waterways, wetlands, native vegetation, native animal habitats, groundwater and other persons property.
- **Minimising salinity** – To ensure that, where limits on groundwater infiltration and controls on drainage disposal are not sufficient to manage identified risks of land or water salinisation, licence holders are responsible for the full costs of measures to reduce those risks, or alternatively, the full cost of necessary offsetting works.
- **Protecting biodiversity** – To set corrective action thresholds and corrective action procedures where limits on groundwater infiltration and controls on drainage disposal are not sufficient to manage identified risks associated with water use to specific wetlands, native vegetation stands or native animal habitats.

- **Minimising cumulative effects of water use** – To ensure that, where a series of individual acceptable expansions in water use within a defined area reaches a previously announced level, the combined impact on other people and the environment is dealt with by remedial action, such as a communal drainage scheme, with water users in the area who expand their use after the announcement contributing to the capital cost in line with their expansion in use compared with total use (and remaining costs shared by government and water users in a way judged after due consultation to be equitable).

The risk assessment framework presented in the following tables is applied as follows:

- The objective of the overall assessment process is to ensure all approved applications are low risk
- Table 4-1 provides a list of possible risk factors which should be considered
- Table 4-2 describes the risk level that is applied when either:
 - **Very high:** Risk factors cannot be mitigated to 'low risk',
 - **High or medium:** Risk factors can be mitigated to 'low risk' by specifying relevant licence conditions, or
 - **Low risk:** None of the risk factor(s) apply.
- The applied level of risk determines the next steps for the assessment process (Table 4-2)
- Possible risk mitigation measures (licence conditions) listed in Table 4-1 may be considered together with the findings from the broader assessment process, including any hydrogeological investigations undertaken, during the formulation of the ID Groups final recommendations.

4 Information requirements and technical assessments

Table 4-1 | Risk factors and licence conditions aligned to Ministerial Water Use Objectives and Policies for Managing Take and Use Licences (s17)

OBJ.	Risk Factors		Conditions to Mitigate H/M Risk
Groundwater infiltration	• Lowan sands (&/or low % clay) • Direct connection between soil and regional groundwater • Surface flood /furrow/ponded irrigation • No scientific method of irrigation scheduling • Receives stormwater • Flood zone	• High salinity of irrigation water requiring high leaching • Pre-existing high water table < 3m before irrigation introduced¹ • High soil salinity • High likelihood of perched water table leaving property boundary • No contingency plans for tile drainage.	• Larger and appropriately delineated buffers • Water table controls • Drainage systems • Irrigation systems and management • Fit for purpose monitoring and reporting • Mitigations identified by hydrogeological investigation.
Disposal of drainage	• Inadequate area for a drainage disposal basin (below the minimum area for a disposal basin)	• Unsuitable soils for construction of a disposal basin.	• An expanded disposal area, and/or • Disposal basin construction techniques • Mitigations identified by hydrogeological investigation.
Salinity	• Pre-existing high water table < 3m before irrigation introduced¹	• High soil salinity.	• Adequate and appropriately delineated buffers • Water table controls • Drainage systems • Irrigation systems and management • Mitigations identified by hydrogeological investigation.
Biodiversity protection	• Pre-existing high water table < 3m before irrigation introduced¹	• Environmental assets in proximity to or within the boundary of the development site (in accordance with Aquaterra 2010a or any successor document).	• Adequate and appropriately delineated buffers • Water table controls • Drainage systems • Irrigation systems and management • Fit for purpose monitoring and reporting • Mitigations identified by hydrogeological investigation.
Cumulative effects of water use	• Offsite land salinisation is already occurring • Proposed location at a site where communal remedial actions are known to be required and there is inadequate capacity to accommodate further expansion	• Hydrogeological investigations reveal a salinity risk affecting more than one WUL and/or T&UL • Water use within a defined area will reach the previously announced level that results in the additional communal remedial actions being required.	• Adequate and appropriately delineated buffers • Water table controls • Drainage systems • Irrigation systems and management.

¹ Based on water tables < 2m depth being recognised as high risk with allowance for changes in water tables of up to 1m due to high rainfall events or impacts of irrigation (e.g. NRE, 2000)

Table 4-2 | Risk levels

Risk Level	Description	Applies When	Implications for Application Process
Very high overall risk	Mitigations / additional special licence conditions will not feasibly achieve 'low risk'.	Risk factor(s) in Table 4-1 above cannot be mitigated to 'low risk'.	Application is unlikely to meet the requirements of Minister's policies regarding water use. The applicant is advised at the earliest opportunity of the very high level of overall risk and that the highest level hydrogeological investigation (Level 1) will be required. The applicant should be made aware that any investments made before the level 1 hydrogeological is completed is at their own risk.
High or medium risk that can be mitigated	Risk can be mitigated by additional special licence conditions to feasibly achieve an acceptable level of risk (medium or low).	Risk factor(s) can be mitigated to an acceptable level of risk (medium or low) by specifying relevant licence conditions such as those listed in Table 4-1 above.	Application may meet the requirements of Minister's policies regarding water use, and the applicant obtaining all other relevant approvals. Hydrogeological risk assessment to determine whether Level 1, 2, 3 or 4 detailed hydrogeological investigation is required. If the proposal is high risk (i.e. would trigger a level 1 investigation), the IDC may recommend the hydrogeological investigation is undertaken earlier in the process and discourage the applicant from investing in other parts of the proposal until this is complete.
Low risk	Standard water use licence conditions will be sufficient to achieve 'low risk'.	None of the risk factor(s) in Table 4-1 in apply.	Application is likely to meet the requirements of Minister's policies regarding water use. Application proceeds without detailed hydrogeological investigation.

4.2 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. Associated infrastructure may also be located on road reserves (including 'unmade' roads). 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 contact Parks Victoria, the relevant water corporations (water diversion), DEECA, the Catchment Management Authority (works on waterways) and Council.

4.3 Works Plan to inform the Works Licence

The purpose of a Works Plan (WP) 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.

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
- Applicants 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

- Applicants must also outline their basic rehabilitation plan once construction is complete.

A 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 the following:

- 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/water-sources/victorias-dams>.



4.4 Irrigation and Drainage Plan that informs the Water Use Licence or Take & Use Licence

Under the Ministerial Determination (2007) Schedule 1 of the Standard Water Use Conditions an application for a new or varied WUL or T&UL must be accompanied by an IDP for the area of land being developed or expanded.² 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 including:
 - Overlay aerial imagery with irrigation footprint, property boundaries and native vegetation, and
 - Legends for all symbology used on maps, scale bar and north point.
- Topographical survey
- Soil survey report and maps
- Irrigation design and management
- Arrangements for drainage disposal
- Biodiversity protection arrangements.

For the new or varied WUL or T&UL to be granted, the IDP must be endorsed by the relevant Water Corporation and a reference to the IDP, including the polygon approved for irrigation, recorded as part of the WUL or T&UL. A key role of the ID Group is to ensure that the IDP accompanying a WUL or T&UL application includes the required information and documents. The ID Group also provides advice to the relevant Water Corporation as to whether the complete IDP will meet the requirements of Minister's policies and the IDGs, including recommending any specific conditions.

4.4.1 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.

² https://waterregister.vic.gov.au/images/documents/consolidated_standard_water_use_conditions.pdf



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 that includes physical and chemical soil characteristics. The standard soil mapping units listed in Appendix 8 are to be adopted for soil profile descriptions. Spacing for the soil sampling is undertaken on a 75x75 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 (Appendix 8).

An AgVic 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 or T&UL.

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 applicant 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 environmental assets such as 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 and on-ground marking and maintenance of buffers to reduce potential for subsequent impacts / encroachment.

4.4.2 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. It is critical to supporting the Ministerial Water Use Objectives of managing groundwater infiltration and protection of biodiversity. 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.

The hydrogeological assessment occurs in two stages:

- An **initial hydrogeological assessment** is undertaken by the IDC, as key component of the preliminary risk assessment, to determine whether the area is at risk of developing a perched water table and further detailed investigation is required. 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. An initial assessment may not be required where previous hydrogeological investigations have been conducted over the property and these are available to the IDC.
- A **detailed hydrogeological investigation** may be required if the initial hydrogeological assessment finds that the proposal is associated with a level of risk above low. A detailed investigation provides more detail to assist in understanding potential risks and is unlikely to 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.

Initial hydrogeological assessment

There are several physical 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 (as per Aquaterra 2010a, or any relevant successor document).

Prior to the initial hydrogeological assessment, the preliminary risk assessment assesses the proposal against the risk of achieving the five Ministerial Water Use Objectives for WULs as outlined in Section 4.1. The preliminary risk assessment determines whether the overall risk level for the project is either low, medium, high, or very high.

- If the risk is low, the application can proceed without a detailed hydrogeological investigation.
- If the overall risk for the project is medium or high, the initial assessment of the likely hydrogeological risk can be undertaken by assessing each attribute and applying a risk rating according to the decision-making process in Figure 4-1 and parameters in Figure 4-2 (Aquaterra, 2010a and Aquaterra 2010b) or any relevant successors. If the overall risk is high, the applicant should be encouraged to avoid investing in other parts of the proposal until the detailed hydrogeological investigation is completed.

- If the risk is very high, the applicant should be given the opportunity to reconsider or withdraw the proposal based on the potential costs of the assessment and mitigation measures (where feasible). If the applicant is unwilling to withdraw the proposal, they should be encouraged to avoid investing in other parts of the proposal until the detailed hydrogeological investigation (Level 1) is complete.

The risk categories are defined as:

Low – a low risk is assigned to a site during the preliminary risk assessment (Section 4.1), which considers the overall level of risk for the proposal. In terms of hydrogeological risks, the definition of low risk is consistent with Figure 4-2: and Figure 4-2 – that there is no high value native vegetation biodiversity in proximity or within the boundary of the development site (in accordance with Aquaterra 2010a or any successor document) and/or where the pre-disposition to perched water table development is insignificant.

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).

High – a high risk is assigned where 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 (in accordance with Aquaterra 2010a or any successor document).

Very high – under the preliminary risk assessment (Section 4.1) a proposed site with pre-existing high water tables of less than 3 m³ that cannot be mitigated would be considered Very high risk

³ Based on water tables < 2m depth being recognised as high risk with allowance for changes in water tables of up to 1m due to high rainfall events or impacts of irrigation (e.g. NRE, 2000)

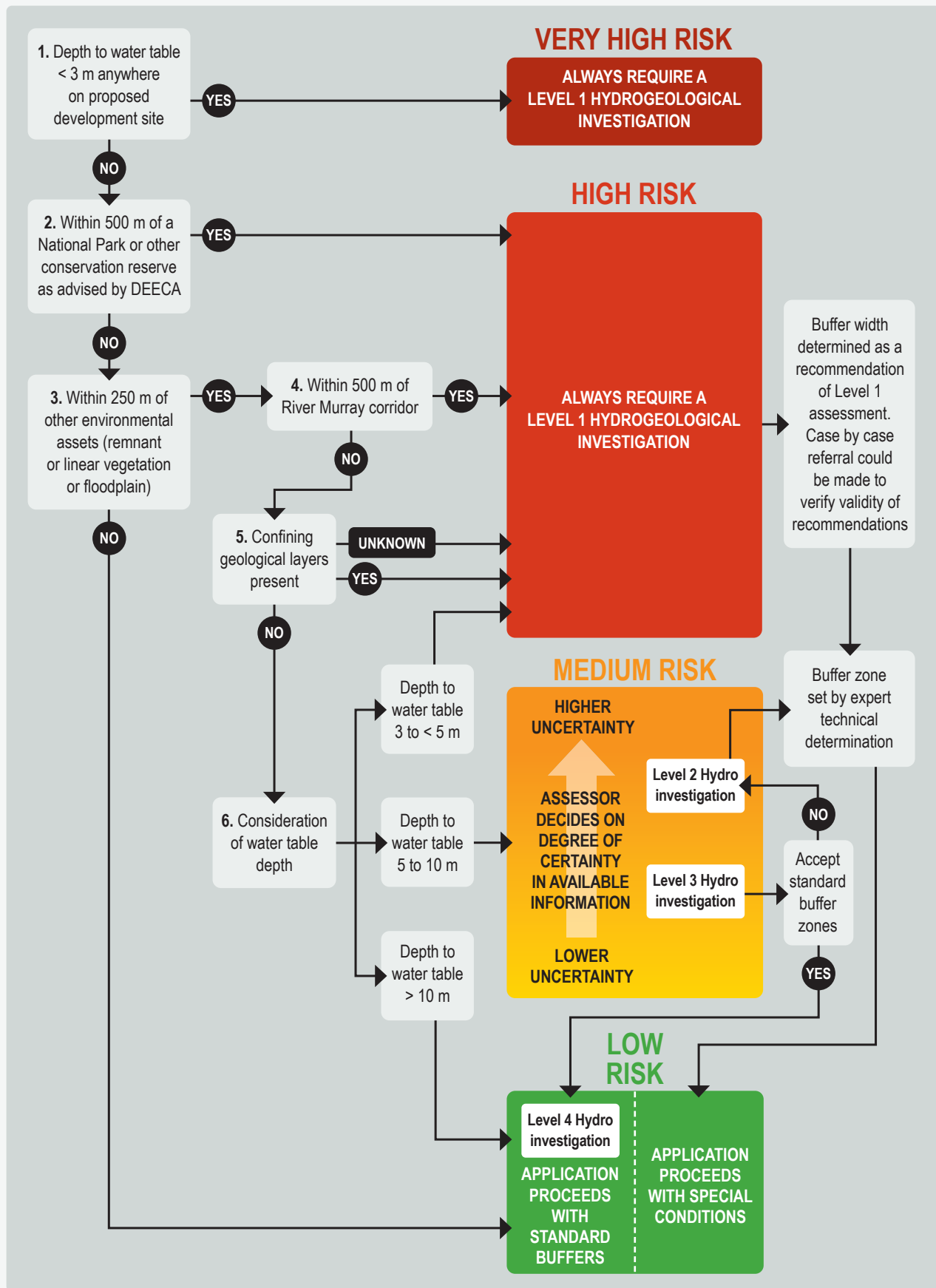


Figure 4-1 | Decision framework for the initial hydrogeological assessment to determine the required level of detailed hydrogeological investigation. Figure also provides guidance on how the level of detailed hydrogeological investigation may be used to inform buffer recommendations.

NO.	Step	Parameter	Measure	Pathway
1	Depth to water table < 3 m anywhere on proposed development	Depth to regional water table	Less than 3 m	Yes (Very High)
				No (Step 2)
2	Within 1000 m of a National Park or other conservation reserve as advised by DEECA	Proximity to National Park or other conservation assets	Within 1000 m	Yes (High)
			Outside 1000 m	No (Step 3)
3	Within 250 m of other environmental assets (remnant or linear vegetation or floodplain or wetlands)	Proximity to other environmental assets	Within 250 m	Yes (Step 4)
			Outside 250 m	No (Low)
4	Within 500 m of River Murray corridor	Proximity to River Murray	Within 500 m	Yes (High)
			Outside 500 m	No (Step 5)
5	Confining geological layer present	Presence of Blanchetown Clay	Presence or absence	High (High)
				Unknown (High)
				No (Step 6)
6	Consideration of regional water table depth	Depth to regional water table	3 to < 5 m	High
			5–10 m	Medium
			> 10 m	Low

Figure 4-2 | Parameters applying to initial hydrological assessment decision framework in Figure 4-1 (adapted from Aquaterra, 2010a and 2010b). Also see below note on extenuating circumstances.

Extenuating circumstances

In some unique cases, the ID Group may be required to consider extenuating circumstance to determine the level of hydrogeological investigation required. In these cases, the ID Group may use discretion provided the group clearly document reasons for any exceptions made, along with an explanation for how the alternative pathway was determined.

Detailed hydrogeological investigation

The assessed risk category and the nature of the application will determine the requirement for a detailed hydrogeological investigation, including the 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.

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. Independent opinion from a qualified hydrogeologist is not required to complete this level, providing that the applicant can demonstrate that specified requirements



(available from the IDC) for a Level 4 investigation are met.

Low – as previously determined through the preliminary risk assessment no further hydrogeological investigation is required for the application. The Water Corporation may require monitoring and the AgVic 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, 2010a or any successor document) 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 outlines how the level

Table 4-3 | Standard vegetation buffers for irrigation developments (adapted from Aquaterra, 2010)

#	Environmental Asset/Value	Standard Hydrogeological Buffer
1	National Park or other conservation reserve as advised by DEECA ^{1,2}	200m
2	Other Crown Land Reserves e.g. State Park, bushland reserve	50m
3	Wetlands included in the Victorian Wetland inventory or other wetlands on private and crown as advised by DEECA ³	30m
4	Patch of native vegetation (> 0.1 hectares) within property or on neighbouring property or roadside reserve (if buffer is unvegetated).	50m
5	Patch of native vegetation (> 0.1 hectares) within property or on neighbouring property or roadside reserve (if buffer is revegetated).	25m
7	Scattered trees or patch of native vegetation (< 0.1 hectares) within property or on neighbouring property ⁴	15m

¹ Proponent to contact DEECA for advice on what conservation areas are in proximity to proposed development

² Note this category may also include other classifications of protected land or areas of significant vegetation in accordance with relevant legislation, such as the Conservation, Forests and Lands Act 1987 (e.g. offset protected native vegetation under s69) or Planning and Environment Act 1987 (e.g. land protected under Victorian Conservation Trust, s173)

³ Proponent to contact DEECA for advice on wetlands within proximity to proposed development

⁴ As measured from the centre of a scattered tree or outer drip line (canopy edge) of a patch of vegetation

of hydrogeological investigation required may inform buffer recommendations.

4.3.3 Vegetation Buffers

Buffers are 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 and vehicular traffic
- 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 4-3.

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, noting that State policy or legislation or Local Government Planning Scheme requirements may restrict reductions in some instances (e.g. setbacks for wetlands).

Reductions to standard buffer widths 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, at the cost of the developer.

Recommendations for reduced buffer widths will not be reviewed until the irrigation design has been completed as the design will influence the decision process.

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

4.4.4 Native vegetation considerations when applying standard hydrogeological buffers

To facilitate consistent application of buffer requirements categories of vegetation as referred to in 4-3) are further defined below.

For scattered trees and native vegetation patches (<0.1 hectares), a 15m buffer should be applied. A 15m buffer is based on the maximum recommended TPZ, as outlined in the Australian standard AS 4970-2025 Protection of trees on development sites and provides a consistent methodology for calculating the buffer.

For scattered trees the buffer should be calculated from the centre of the tree, and for native vegetation patches <0.1ha it should be calculated from the outer drip line (canopy edge) of the patch.

Retained native vegetation patches >0.1 hectare in size must be protected by either:
a 25m revegetated buffer, or
a 50m unvegetated buffer.

An exception may be applied if an accredited native vegetation site assessor determines that the patch lacks significant natural structural characteristics – specifically, where the patch comprises of a naturally treed EVC, but trees or long-lived shrubs are absent from the retained patch.

In such cases, a reduced buffer of 15m may be applied, consistent with the buffer requirements for scattered trees and native vegetation patches <0.1 hectares in size.

Naturally treeless patches >0.1ha are not eligible to have buffers reduced and must be protected by a 25m or 50m buffer”

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*).

Wetland native vegetation stand of significance include but aren’t limited to wetlands mapped as Current Wetlands in the Native Vegetation Offset Tool (<https://mapshare.vic.gov.au/nvr/> select Native vegetation offset tool).

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 revegetated buffer must be managed as follows:

- Revegetated buffers must not to be used for vehicular transport, turning circles, storage of machinery or equipment or any other farm operation activity
- Revegetation 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, or direct drilled to the same density.
- If livestock grazing is to remain a component of the development enterprise, stock proof fencing is to be erected to exclude livestock from any revegetated buffer area
- Buffers to be marked on ground by posts and appropriate signage. Posts shall not be less than 1m above ground level, painted white and situated so each post is clearly visible from adjacent posts
- Appropriate measures must be in place to maintain separation between irrigation activities and the buffer area and prevent encroachment.

The 25m vegetated buffers between native vegetation remnants and plantings will be planted within 12 months of the planting of adjoining irrigated horticultural crops. Species used in buffer revegetation works will be based on the adjoining or most likely Ecological Vegetation Class. These buffers will comprise a minimum of 4 rows of plants. If planting tube stock, plant spacing along a row will be 4 metres, with the aim to achieve an average vegetation density of at least 400 plants per hectare. Direct seeding is an acceptable method of planting on the condition that vegetation densities are met. If direct seeding, seeding rates will also achieve aim for an establishment of 400 plants per hectare.

Unvegetated 50m buffers of any width must be managed as follows:

- Unvegetated buffers must not be used for works or development, including vehicular transport, turning circles, storage of machinery or equipment or other farm operation activity, without the permission of regulatory authority
- Buffers to be marked on ground by posts and appropriate signage. Posts shall not be less than 1m above ground level, painted white and situated so each post is clearly visible from adjacent posts
- 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 irrigated areas. Buffer distances are calculated from the edge of the irrigation area for unvegetated buffers, or from the edge of the pivot headland for revegetated 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.

4.5 Peer reviews

During the irrigation development assessment process, any referral authority may request a peer review of information provided by the applicant, to ensure the information is complete and that it satisfies the statutory requirements.

The factors that trigger the need for a peer review will depend on, the appearance of factual errors, the relative novelty of the assessment approach, and the level of

complexity involved in the calculations or modelling. Where such triggers are encountered, a peer review, by an independent, external consultant, will help to assure the integrity of the application process.

In most cases, the applicant will be required to pay costs associated with the peer review.

4.6 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 and/ or RMCG 2025; (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)
- Guidelines and Application for infrastructure and works on or across Parks Victoria managed land (available from IDC)
- Dam information available from DEECA – see <https://www.water.vic.gov.au/water-sources/victorias-dams/dam-safety-guidance>.

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 WUL, T&UL or WL cannot be withheld based on the requirements of other Acts of Parliament. However, Water Corporations generally will not issue a WL, T&UL, or WUL while another referral authority is still fulfilling its statutory requirements in considering other relevant approvals. It is important for applicants to be

aware that the proposed developments may not proceed without first obtaining all necessary approvals (DSE, 2010). Nonetheless, a Water Corporation may issue a licence before another permit is granted, if, for example, another referral authority has advised that it does not want the permitted action (such as native vegetation removal) to take place unless the proposed irrigation development actually proceeds.

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.

The AH Act and the AH Regulations provide 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 applicant 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 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 irrigation development a CHMP can be triggered by new utilities such as pipelines, which are high impact activities on sites of cultural sensitivity
- Most 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 applicants 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 DPC 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 applicant
 - A voluntary CHMP can put a worthwhile risk management process in place
 - 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. An applicant 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 applicant'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

5 Other approvals required for irrigation development

- 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 & Aboriginal Heritage Regulations 2018*: <https://www.firstpeoplesrelations.vic.gov.au/aboriginal-heritage-legislation>
- First Peoples – State Relations (<https://www.firstpeoplesrelations.vic.gov.au/>)
 - General enquiries – 1800 762 003
 - Information Victoria Call Centre – 1300 366 356
 - Email – Aboriginalaffairs@dpc.vic.gov.au

- Heritage Division, Department of Climate Change, Energy, the Environment and Water <https://www.dcceew.gov.au/parks-heritage/heritage/about/indigenous-heritage>
 - Email: atsihpa@environment.gov.au
- *Aboriginal Heritage Act 2006* – Information sheets
- *Aboriginal Heritage Regulation 2007* (<https://www.legislation.vic.gov.au/as-made/statutory-rules/aboriginal-heritage-regulations-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 PLM 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. PLM consent may also be required for 'unmade roads' or other public land where works associated with infrastructure are required, and contact

with the relevant public land manager should be made eg Council, DEECA, PV etc.

Further information is available at:

- *Siting and Design Guidelines for Water Diversion Works across Crown Land (NRE, 2001)* and/ or RMCG 2025. Refer to Development Information Package
- Guidelines and Application for infrastructure and works on or across Parks Victoria managed land (Parks Victoria 2023).

5.4 Local Council Requirements (*Planning and Environmental Act 1987*)

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:

- 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 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.



Walking through a local vineyard.

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 DEECA, 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 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 [DEECA 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. The full extent of impact on native vegetation must be considered including both direct removal/loss and assumed loss (e.g. impacts within tree protection zones through trenching and encroachment, indirect loss such as changes in hydrology etc.) (DELWP, 2017).

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 10-year management plan and must be secured in perpetuity with:

- An agreement with the Secretary to DEECA 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-removal-regulations> and <https://www.environment.vic.gov.au/native-vegetation/native-vegetation-removal-regulations/offsets-for-the-removal-of-native-vegetation>.

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

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.

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 Energy, Environment and Climate Action: 1800 803 772
- *Environment Protection and Biodiversity Conservation Act (EPBC) 1999 and Regulations 2000*
- Significant Impact Guidelines: <https://www.dcceew.gov.au/environment/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 DEECA office (loddonmallee.environment@deeca.vic.gov.au).

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 DTP 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 DEECA, known as a Wildlife Management Authorisation. Further information can be found at <https://www.vic.gov.au/wildlife-management-and-control-authorisations>.



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.
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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 (or T&UL in an undeclared system) is the legislative vehicle that brings the two together. Outlined in this section are the relevant policies related to irrigation development.

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. Figure 7-2 outlines sections of the Victorian *Water Act 1989* relevant to irrigation development (DSE, 2010).

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.

The setting of Water Use Objectives, WUL, T&UL and works licences 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, T&ULs and works licences. In granting a WUL, T&UL 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 policies for managing take and use licences and policies for managing works licences.

Table 7-1 | Sections from the *Victorian Water Act 1989* relevant to new irrigation development.

	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: • 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: • 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.
General Place of Take Approvals	Section 64FC	A person requires a general place of take approval which authorises taking of water, as relevant water allocations held by that person, at an approved place.
	Section 64FX and 64FY	A person may apply to vary or transfer extraction share in line with Ministerial rules. Extraction share provides a river diverter GPT holder the right to take a share of water available during delivery restrictions/shortfall. Note that delivery restrictions are rare, and extraction share does not constrain take during normal flow periods.

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

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 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 applicants 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 Take and Use Licences

The requirements for T&UL under the *Victorian Water Act 1989* (e.g. Section 51, 53, and 56) are supplemented by the written policies for the management of take and

use licences. The policies apply all licences to take and use water in Victoria including surface and groundwater licences. In the Mallee, these licences enable groundwater extraction in the Murrayville Groundwater Management Area.

The policies set out:

- Limits surrounding the issuing and management of licences (e.g. limits against permissible consumptive volumes (PCVs) and sustainable diversion limits (SDLs), new surface water and all year licences, winter-fill licences and groundwater licences)
- Provisions for licence conditions and list of standard conditions for taking and using water (Schedule 2)
- Requirements for the use of water with respect to Section 40 and the Minister’s Water Use Objectives
- Requirements for IDPs prepared to support T&UL applications (Schedule 3)
- Requirements for groundwater assessment reports to support T&UL applications (Schedule 4)
- Provisions for owning and occupying land where the licence is to be used
- Processes for deciding on licence applications.

7.2.6 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.

7.2.7 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 7-2. 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 SIZs indicate the relative potential for irrigation water to displace naturally saline regional groundwater and impact on Murray River water quality.

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 SIZs 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 SIZ 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 LMW website at <https://www.lmw.vic.gov.au/billing-charges-fees/rural-charges-fees/>.

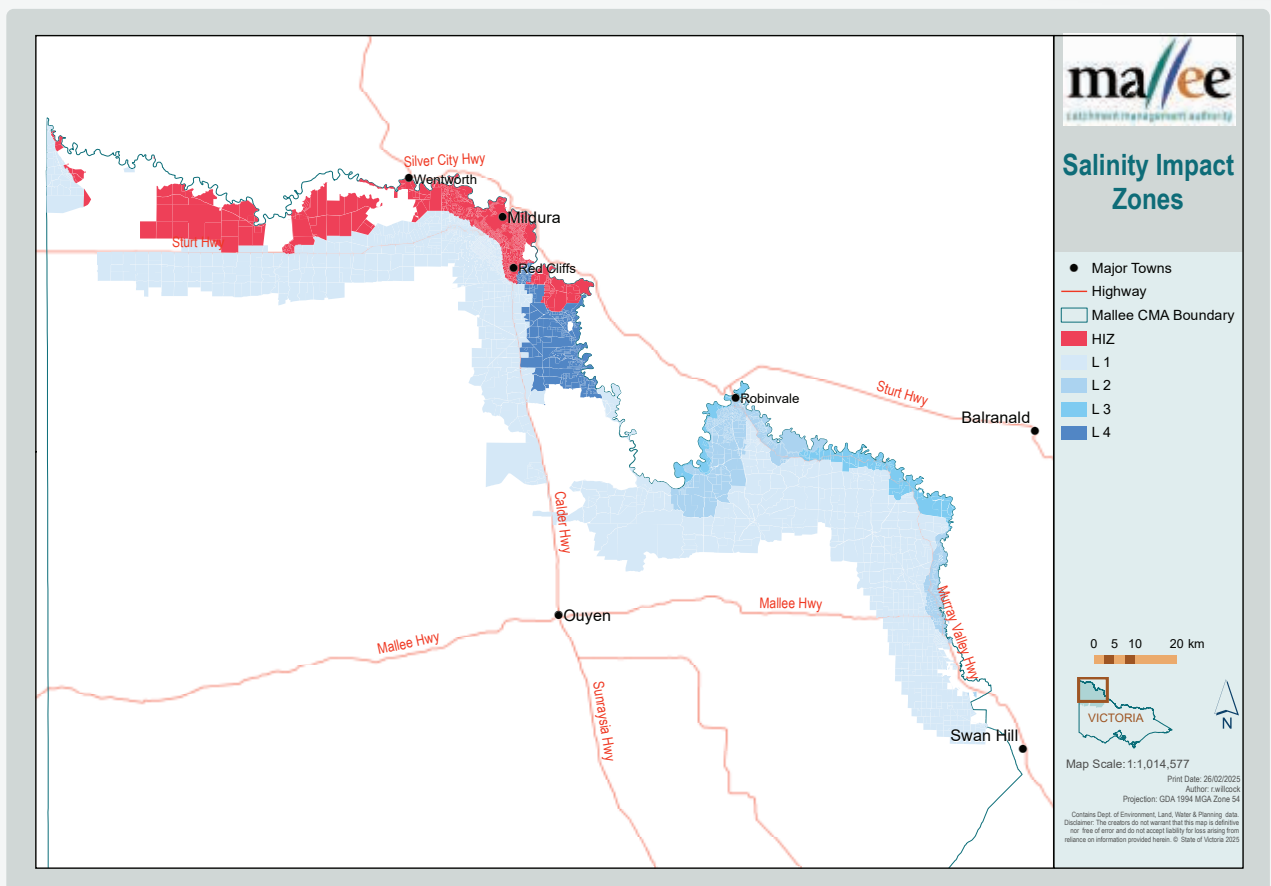


Figure 7-1 | Mallee Salinity Impact Zones

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 CMAs 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 (2022–28)

The RCS provides a vision for the integrated management of natural resources in the Mallee region. (Mallee CMA, 2022). The RCS provides a framework for coordinated management of the catchment to ensure the quality of the state's land and water resources and associated plant and animal life are maintained, while maintaining and enhancing long term land productivity. 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 healthy and resilient landscapes being cared for by connected communities; long-term (20-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 Victorian Mallee Irrigation Region 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. The 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 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 (BSM2030) with the impact of 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 the Guidelines. The 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*.

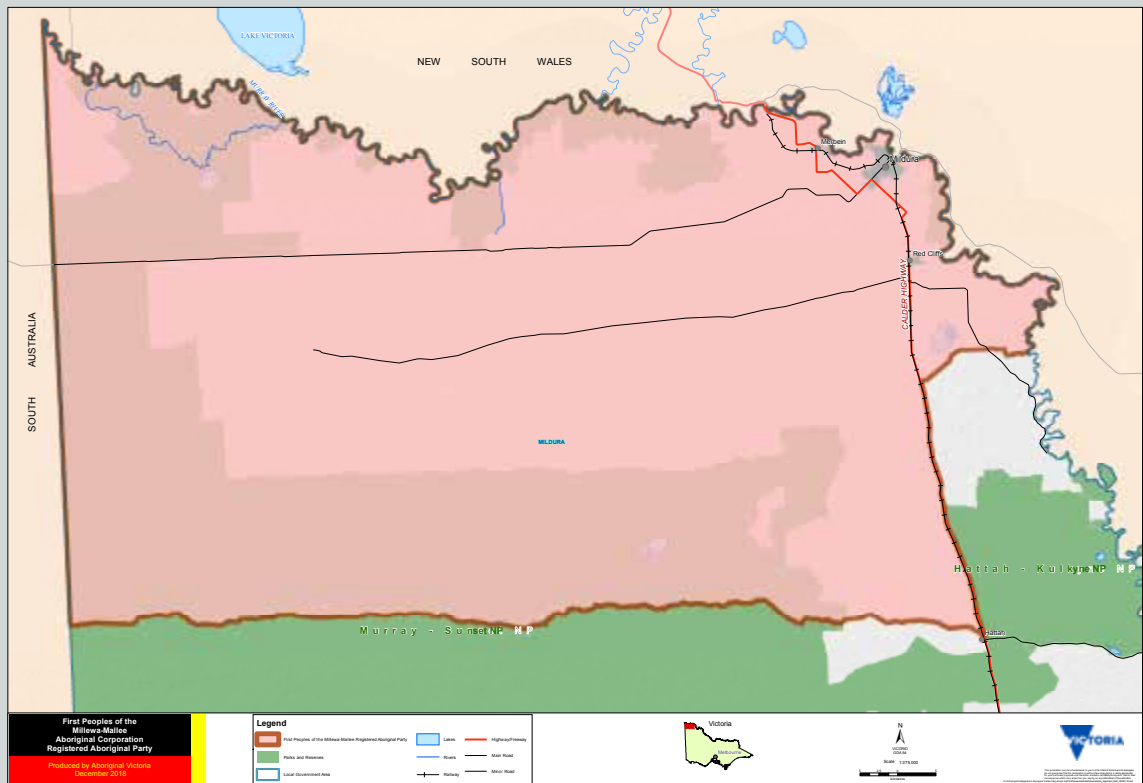


Figure 7-2 | First People of the Millewa-Mallee Aboriginal Party RAP area (map downloaded 17/6/19)

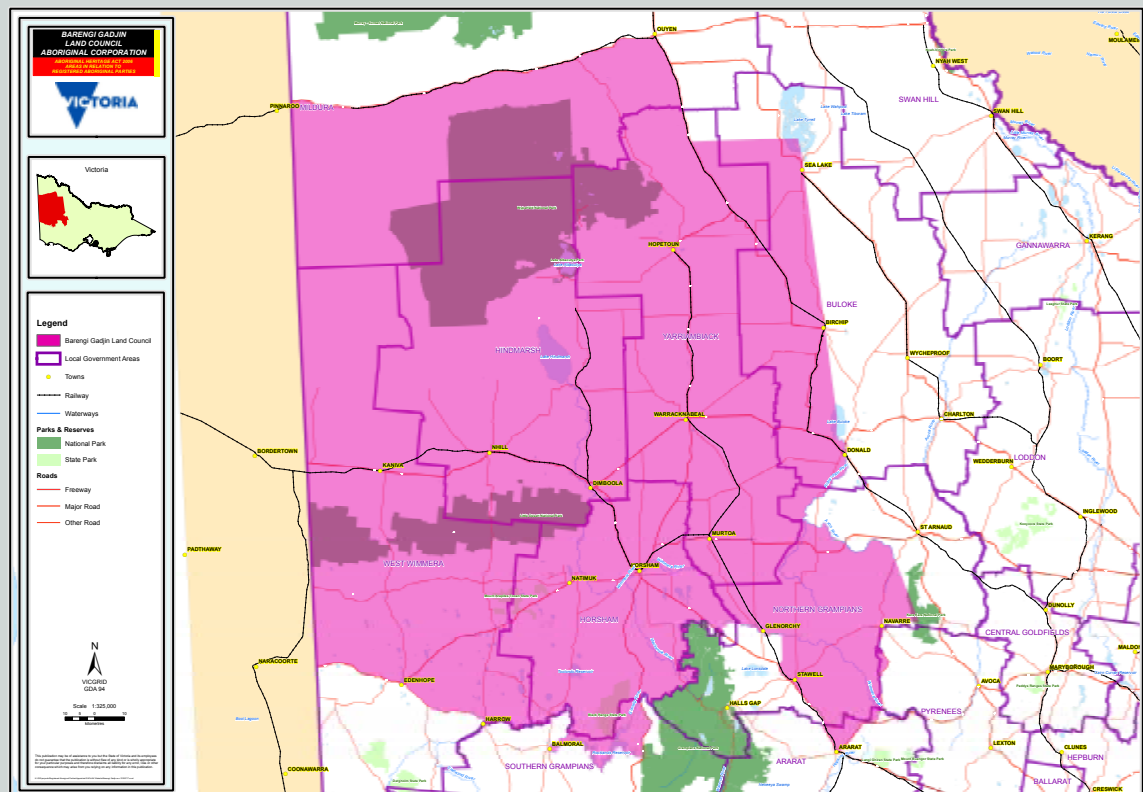


Figure 7-3 | Barenji Gadjin Land Council Aboriginal Corporation RAP area

8 Appendix 2

Victorian Mallee Irrigation Development Group - Terms of Reference.

1.0 Background, Title, Purpose, Objectives and Membership, Roles and Responsibilities of the Mallee Irrigation Development (ID) 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.

To minimise those threats, water cannot be used for irrigation in the Mallee without a licence to use water. 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.

Under the *Water Act 1989*, granting a water-use licence, a works licence, or a licence to take and use water 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.

The Mallee Irrigation Development (ID) Group provides a forum to collaborate, evaluate and work through complex irrigation development proposals to ensure that applications for all relevant licences, authorisations and permissions are accompanied by the necessary documents and information. The Terms of Reference for

the ID Group define the function of the group. Individual roles and responsibilities are described for each member agency.

1.2 Title

Mallee Irrigation Development Group, or ID Group.

1.3 Purpose

The purpose of the ID Group is to coordinate the development of the information and documents (including prescribed information or prescribed documents) that must accompany an application for a Water Use Licence (WUL), Works Licence (WL), or a licence to take and use water (T&UL). At the same time, it coordinates the development of the information and documents necessary to support the applications for all other legal instruments necessary with respect to anything authorised by the licence.

When the ID Group is satisfied that all information and documents supplied by the applicant meet the statutory requirements of relevant legal instruments, and when it is satisfied that the information and documents are consistent with the Irrigation Development Guidelines (IDGs), the group must forward the information and documents to the relevant Water Corporation with a recommendation that the Corporation endorse the associated Works Plan (WP) or Irrigation Development Plan (IDP). The ID Group may also recommend site-specific, particular conditions for the relevant licence.



The Water Corporation will then determine whether or not to endorse WPs or IDPs and grant the licence with or without the conditions proposed by the ID Group.

If the ID Group reasonably believes that any of the associated necessary legal instruments are unlikely to be granted, or if it reasonably believes that the proposal cannot satisfy the Minister's Water Use Objectives, the group must advise the Water Corporation accordingly, so that the Water Corporation can exercise its delegated powers to process the application and to determine whether or not to grant the licence.

The purpose of this document is to define the objectives of the ID Group, its membership, roles and responsibilities. It also defines 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. These include, but are not limited to:
 - *Aboriginal Heritage Act 2006* and *Aboriginal Heritage Regulations 2018*
 - *National Parks Act 1975* and *Crown Land Reserves Act 1978*
 - The *Planning and Environment Act 1987* (including Local Council Planning Requirements, floodplain management and works on waterways)
 - Planning Permits
 - River Murray and NSW approvals
 - *Environmental Protection Biodiversity Conservation (EPBC) Act 1999*
 - *Flora and Fauna Guarantee Act (FFG) 1988*
 - *Environment Effects Act 1978*
 - *Wildlife Act 1975*.
- 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 applicants and the assessment of applications.

- g) Consider whether the ID Group should recommend that the relevant Water Corporation endorse Work Plans and Irrigation Drainage Plans as part of its application 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 representatives

- Two nominated Agriculture Victoria 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 DEECA Water and Catchments member
- One nominated DEECA Natural Environment Program member
- One nominated DEECA Planning and Environment Assessment member
- Two nominated Mallee CMA members.

Optional agency representatives

- One nominated Parks Victoria (PV) member
- One nominated First Peoples – State Relations
- First People of the Millewa-Mallee Aboriginal Corporation (FPMMAC)

The Core Agency membership of the ID 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 ID Group may need to consult with other agencies, such as First Peoples – State Relations or a relevant Registered Aboriginal Party. These agencies may attend less frequently or on an as needed basis.

Observer participation is at the discretion of the ID Group 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 ID 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 ID 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.

Agriculture Victoria – IDC

- Convene and chair ID Group meetings to facilitate open discussion and delivery of outcomes to support the irrigation development assessment process
- Prepare meeting agendas and distribute meeting papers
- Ensure documentation and distribution of meeting minutes
- Track and report irrigation development assessment progress
- Present relevant WPs and IDPs

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.

DEECA – Planning and Environment Assessments and Natural Environment Program

- Provide advice on native vegetation and 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.

Parks Victoria

- Provide advice on Crown Land issues, licensing and authority to use Crown Land
- Provide advice on Crown Land matters administered under the *National Parks Act 1975* and the *Crown Land Reserves Act 1978*.

DEECA – 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.

Agriculture Victoria – Soils Advisor

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

Mallee CMA

- Monitor the workings of the ID 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.

Registered Aboriginal Party or First people state relations

- Provide advice on cultural heritage matters

1.7 Meeting

Quorum

A quorum will comprise at least one representative from AgVic, LMW (or other relevant Water Corporation), DEECA Planning and Environment Assessments and the Mallee CMA.

Decisions

Final application recommendations made on behalf of the ID Group will be based on unanimous agreement. Disagreements will be resolved through prompt conflict resolution processes to address divergent views and technical issues in order to minimise delays in the irrigation development assessment process. If necessary, the CEO of the Mallee CMA may recommend a dispute resolution mechanism.

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.

2.0 Code of Conduct

2.1 Principles for Code of Conduct for the ID Group

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

- Ensure that the work of the ID 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 ID 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 ID Group as soon as it is known
- Determine response to any perceived or actual conflict of interest or pecuniary interest.

2.2 Confidentiality

All material dealt with by the ID 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.

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 an ID 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

ID Group members must take care not to use their position on the committee to influence any other member of the ID 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.

2.4 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 AUL 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 ('Schedule 2'). 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).

An extended list of MAR for crop types not listed in Schedule 2 is also provided in Appendix 7. The list, which was last adopted by Mallee CMA in 2018, was prepared using a method consistent with FAO 56. It also incorporates the Schedule 2 MAR list for convenience.

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.

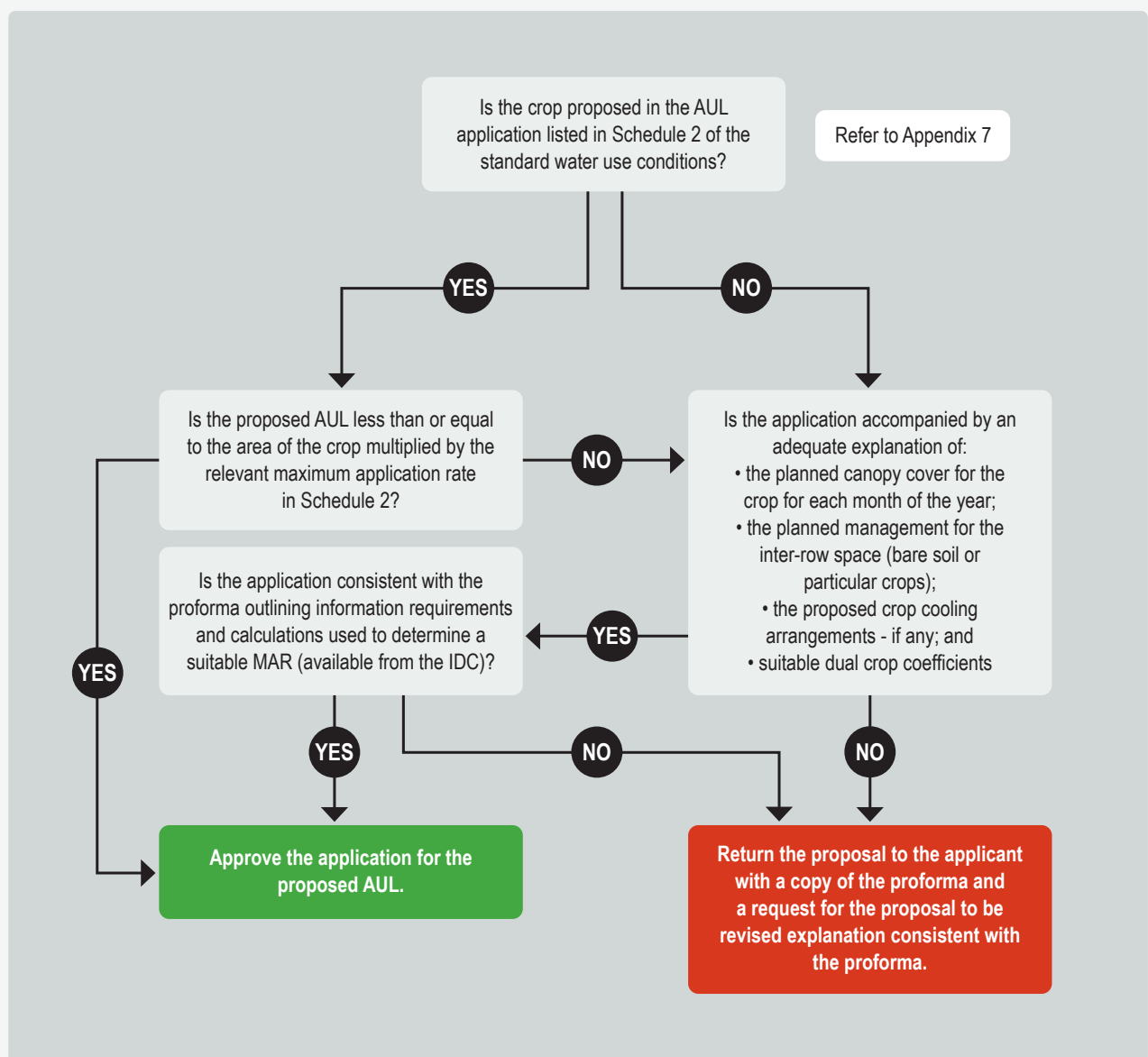
Please refer to appendix 7.

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 DEECA, and/or a technical specialist, when reviewing the application and determining whether the application should be approved.



Victorian Mallee Irrigation Development Guidelines 2024 63

10 Appendix 4

Works License Condition Sets - 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.

30 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 required 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 required 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 - hazard).

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 GMW⁷).

The bore(s) must be constructed by, or under the supervision of, a driller licenced 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 GMW⁸).

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].

⁷ 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.

⁸ 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.

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.

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 – Available in the Victorian Water Register.

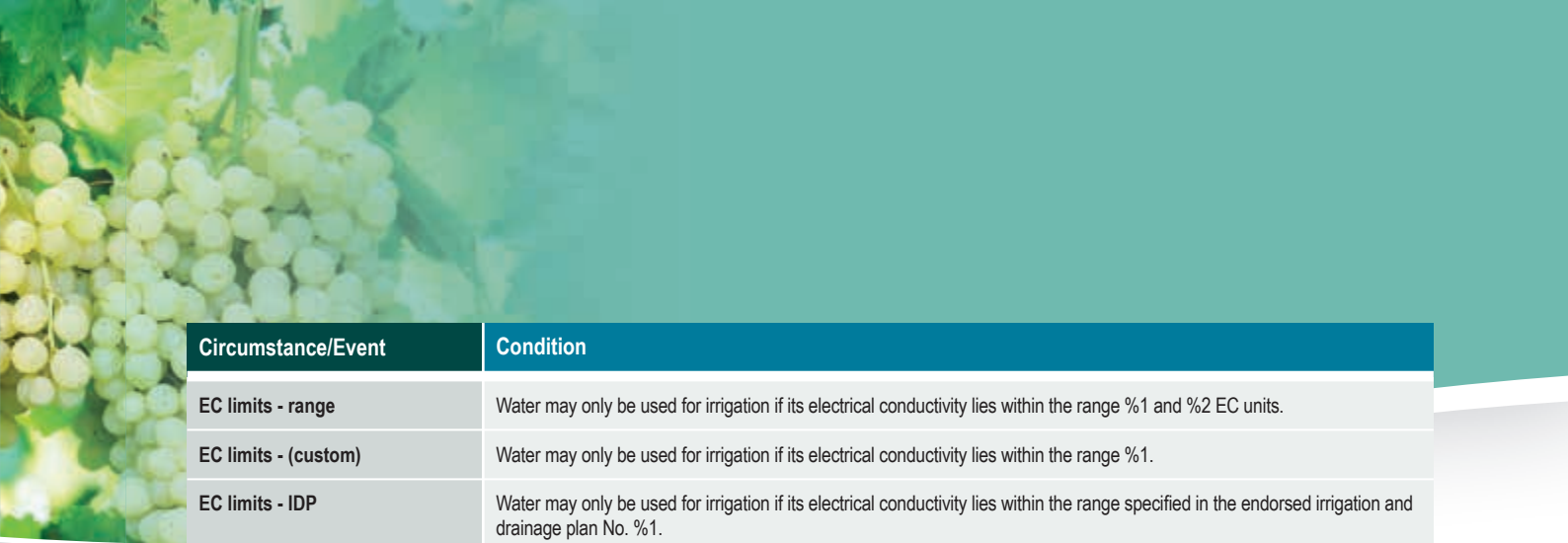
The relevant parts of the agreed Irrigation and Drainage Plan must ultimately be translated into enforceable conditions on a water-use licence. Similarly, the agreed Works Plan must also be translated into enforceable conditions on a works licence. In that context it is helpful for approval agencies 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 for 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 11-1 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 %1.
Drainage disposal - other (WUL)	Where irrigation results in drainage from the land specified in the licence that drainage water must be disposed in %1.
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 %1.
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 undertake and use licence No. %1.
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 %1 and %2 EC units.
EC limits - (custom)	Water may only be used for irrigation if its electrical conductivity lies within the range %1.
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. %1.
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 %1.
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 %1.
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 %1 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 %1 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 %1 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 %1.
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 %1.
Auditing monitoring data (use)	Water may only be used for irrigation while appropriately accredited auditors audit monitoring data %1.
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 %1.
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. %1.
Posting monitoring data (WUL)	Water may only be used for irrigation while the licence holder posts recorded monitoring data to the Victorian GMS %1.
Recording monitoring data (WUL)	Water may only be used for irrigation while the licence holder records monitoring data %1.
Drainage disposal - other (WUL)	Where irrigation results in drainage from the land specified in the licence that drainage water must be disposed in %1
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. %1
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. %1
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 %1.
Conditions same as previous s51	Water use is subject to the same conditions that applied to the use of water undertake and use licence No. %1.
Conditions same as previous s51	Drainage is subject to the same conditions that applied to the use of water undertake and use licence No. %1.
Conditions same as previous s51	The minimisation of salinity is subject to the same conditions that applied to the use of water undertake and use licence No. %1.
Conditions same as previous s51	The protection of biodiversity is subject to the same conditions that applied to the use of water undertake and use licence No. %1.

Table 11-2 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 XXXX.
Special Condition	Unless otherwise directed by the authority irrigation can only occur on Volume XXX Folio YYY 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 XYZ – Hydrogeological Investigation of proposed Irrigation Development, final version dated 9 October 2007, specifically: a) The Licence holder must construct and maintain 4 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 drawing number 6012.07 dated 2/2/2012 e) By 31st August each year a copy of all groundwater monitoring data and recorded drainage volumes obtained must be submitted to the Mallee Catchment Management Authority.
Hydrogeological Investigation	The licence holder must comply with recommendations contained in XXX – Hydrogeological Investigation of proposed Irrigation Development, final version dated 9 October 2007, specifically a) The Licence holder must construct and maintain 4 groundwater observation/monitoring bores (Piezometers) at locations recommended in the above report by April 1st 2013. 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 drawing number 6012.07 dated 2/2/2012 e) By 31st August each year a copy of all groundwater monitoring data and recorded drainage volumes obtained must be submitted to the Mallee Catchment Management Authority and Lower Murray Water.
Area to be irrigated	Unless otherwise directed by the authority the total area permitted for irrigation is 100 hectares.
Disposal of drainage water	The licence holder must dispose of subsurface drainage water to the adjacent swamp.
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 on CA 6A volume 10831 folio 274 in addition to any existing supply from Lower Murray Water.
Irrigation system design	The licence holder must advise Lower Murray Water of any amendments to the irrigation design as submitted.
Metering	The licence holder must install at their own cost an appropriately sized and LMW 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 YYYY - Special Purpose Soil Survey, dated June 1999, rewritten February 2009, and recommendations contained in YYYY - Special Purpose Soil Survey and Irrigation Management Plan, dated 10th July 2013, specifically a) The Licence Holder must construct and maintain 6 monitoring bores to a depth of 2.5 metres in place of the testwells recommended in the YYYY - Special Purpose Soil Survey, dated June 1999, rewritten February 2009 b) The Licence Holder must construct and maintain 3 monitoring bores to a depth of 2 metres in place of testwells recommended in the YYYY - Special Purpose Soil Survey and Drainage and Irrigation Management Plan, dated 10th July 2013 c) 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) By 31st August each year a copy of all groundwater monitoring data must be submitted to the Mallee Catchment Management Authority and Lower Murray Water.
Native Vegetation Corridors	The licence holder must construct and maintain 6 testwells to a depth of 2 metres near soil pits 5,10,47,75,133 and 140 as recommended in the Department of Environment and Primary Industries Soil Report dated 18th July 2013 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)".

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 irrigation development approvals process for the Mallee CMA region & Irrigation Development Application Form
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. Hydrogeology
8. Overview of Works Licence
9. Murrayville Groundwater Management Area
10. Guidelines and Application for infrastructure and works on or across Parks Victoria managed land

13 Appendix 7

Extended list of MAR for crop types not specified in Schedule 2.

Table 13-1 provides an extended list of MAR for crop types not listed in Schedule 2 of the Ministerial Determination of Standard Water Use Conditions ('Schedule 2') is also provided in Appendix 8. The list, which was last adapted by Mallee CMA in 2018, was prepared using a method consistent with "Crop evapotranspiration – guidelines for computing crop water requirements", FAO Irrigation and Drainage Paper 56 (Allen R.G., 1998). It also incorporates the Schedule 2 MAR list for convenience Table 13 2: Extended list of MAR for crop types adopted by Mallee CMA in 2018.

Crop Type	Maximum Application Rate (MAR) (ML/HA)	Crop Type	Maximum Application Rate (MAR) (ML/HA)	Crop Type	Maximum Application Rate (MAR) (ML/HA)
Almonds	14	Fig	9.0	Rockmelons	7.5
Apple	15	Garlic	10	Sesame	6
Artichoke	14.5	Geraldton Wax	16.5	Silverbeet	6
Asparagus	13	Herbs	16	Sorghum	7
Avocado	13	Jojoba	7.5	Soybeans	8.5
Banksia	11	Kiwi	14	Spinach	2
Beans Dry	6.5	Lentil	5	Spring Onion (Summer & Winter crop)	5.5
Beans Green	4	Lettuce (Spring & Winter Crop)	3.5	Stonefruit (apricot, cherry, plum, peach, nectarine)	13
Beetroot	5	Leucadendron	11	Strawberry	6
Blueberries	13	Linseed/Flax	7	Sunflower	8
Boronia	17.5	Lucerne	15.5	Sweet Potato	10
Broad Bean	1.5	Lychee	12	Table Grapes	12
Broccoli	3	Mango	9	Tomato	11
Brussel Sprout	8	Maize Grain/Sweetcorn	11	Turf	15.5
Cabbage	3	Millet	6	Turnips	2
Canola	4	Olive	12	Walnuts	15.5
Capsicum	12.5	Onions	11	Watermelons	7
Carrot (Summer & Winter Crop)	12	Parsnips	2.5	Cereals	4
Cauliflower	3	Passionfruit	16	Wine Grapes	9
Celery	4	Pasture	17.5	Zucchini	6
Chickpea	3.5	Pea	3		
Chinese Cabbage	2.5	Pear	13		
Citrus	12	Pecan	12		
Clover Seed	7.5	Persimmons	12.5		
Cotton	10.5	Pistachios	13		
Cowpea/Green Gram	5.5	Pomegranate	9		
Cucumber	9	Potato (Summer & Winter crop)	15		
Date Palm	15.5	Protea	11		
Dried vine fruit	9	Pumpkin	8.5		
Eggplant	11	Radish	3		
Eucalyptus	18.5	Rhubarb	13		
Faba Bean	5.0				

14 Appendix 8

Standard soil mapping units

Table 14-1 | Standard mapping units to be adopted for the soil survey assessment.

Unit	Description
Unit 1	Generally, deep sandy topsoil throughout the depth of the soil profile or moderately deep (60 to greater than 80 cm) sandy increasing to lighter loam topsoil overlying a compaction layer or sandy to lighter loam textured carbonate subsoils. This unit poses a minimal hazard for perched water table development.
Unit 2	Generally, moderately deep (greater than 40 to 80 cm) sandy increasing to lighter loam topsoil overlying either a compaction layer, rubble or lighter loam carbonate subsoils to depth (100cm) with heavier loam textured carbonate subsoils at depth. This unit poses a slight to moderate hazard for perched water table development.
Unit 3	Generally, shallow to moderately deep (less than 40 to 60 cm) sandy increasing to light / moderate loam topsoil overlying either a compaction layer, rubble or heavier textured carbonate subsoils. Class I carbonate and / or sheet rock may occur at depth. Requires careful irrigation management as this unit poses a moderate hazard for perched water table development.
Unit 4	Generally, shallow (less than 40 cm) sandy increasing to moderate loam topsoil overlying either compaction layer, Callabonna clay or heavier loam and clayey textured carbonate subsoils. Class I carbonate generally within 1 m of the surface. Requires careful irrigation management as this unit poses a moderate to high hazard for perched water table development.
Unit 5	Generally, shallow (less than 40 cm) light increasing to moderate loam topsoil overlying either rubble, Callabonna clay or heavier loam and clayey textured carbonate subsoils. Class I carbonate generally within 50 to 100 cm of the soil surface with Blanchetown clay generally below 1 m. Requires careful irrigation management as this unit poses a high hazard for perched water table development.
Optional sub-unit identification for mapping to identify other potential issues within an IMU	
R Unit	Sites with significant amount of shallow rock (30 cm or shallower) which could be displayed as a gravel hatch on top of the IMUs listed above. Caution required when ripping as the rock material will most likely be incorporated into the topsoil layers and / or pulled to the soil surface.
C Unit	Sites with Blanchetown clay encountered within 1 metre of the surface which could be displayed as a clay hatch on top of IMU 5.
W Unit	Sites with perched water table observed within and below 1 metre of the surface which could be displayed as a blue and red water table hatch on top of the IMUs listed above.

Note: as some units only have slight differences, they can be combined for practicality in irrigation design and management. For example, units 1 and 2 can be combined. Units 2 and small areas of unit 3 can be combined. Areas of units 4 and 5 that are considered suitable for development can be combined. When units are combined, they should be irrigated to the unit with the highest hazard for perched water table development to minimise the drainage risk.

15 Appendix 9

Links to technical resources

Table 15-1 | Compiled list of technical resources to support the Victorian Mallee irrigation development assessment process.

Resources	Website / Link
Water Use Licence Ministerial Determinations: - Ministerial Water Use Objectives (2007) - Standard Water Use Conditions (2008), incl.: - Schedule 1: Irrigation and Drainage Plans; - Schedule 2: Maximum Application Rates	Victorian Water Register: https://waterregister.vic.gov.au/water-entitlements/about-entitlements/water-use-licences?highlight=WyJ6b25lliwiaW4iL CJ6b25llGlu10=
Policies for managing Works Licences (2016) incl.: - Schedule 1: Standard conditions for works licences; - Schedule 2: Works Plan; - Schedule 3: Selection criteria for consultants to undertake an environmental assessment report; - Schedule 4: Requirements for environmental assessment report.	Victorian Water Register: https://waterregister.vic.gov.au/water-entitlements/about-entitlements/works-licences
Salinity management provisions Ministerial Determination of Salinity Impact Zones and Salinity Impact Charges (2021)	Victorian Water Register: https://waterregister.vic.gov.au/water-entitlements/about-entitlements/water-use-licences?highlight=WyJ6b25lliwiaW4iL CJ6b25llGlu10=
Place of Take Approvals incl.: - Ministerial rules for managing general place of take approvals (2023) - Minister's conversion rules for place of take approvals (2023) - Fact Sheet: Extraction share cap and trade in the Murray (2023)	Victorian Water Register: https://www.waterregister.vic.gov.au/water-entitlements/about-entitlements/place-of-take-approvals
Catchment management and planning, Mallee region: - Mallee Regional Catchment Strategy (2021–27) - Victorian Mallee Irrigation Region Land and Water Management Plan (2020–2029)	Mallee CMA website: https://mallee.rcs.vic.gov.au https://malleecma.com.au/wp-content/uploads/2021/01/MCMA_MalleeIrrigationRegionLWMP_2020-29_FINAL_B_web.pdf
First Peoples – State Relations resources, incl: - Registered Aboriginal Party (RAP) areas; - Cultural Heritage Management Plan resources.	First Peoples - State Relations and Victorian Aboriginal Heritage Council websites: https://www.aboriginalheritagecouncil.vic.gov.au/victoria-registered-aboriginal-parties https://www.firstpeoplesrelations.vic.gov.au/cultural-heritage-management-plans-permits-agreements-and-tests https://www.firstpeoplesrelations.vic.gov.au/cultural-heritage-management-plans
Public Land Manager Consent resources: Guidelines and Application for infrastructure and works on or across Parks Victoria managed land	Available from relevant Public Land Manager
Planning Policy Framework resources: Planning schemes	https://www.planning.vic.gov.au/planning-schemes/browse-planning-schemes

Continued...



Table 15-1 | Compiled list of technical resources to support the Victorian Mallee irrigation development assessment process. *Continued...*

Resources	Website / Link
Native vegetation removal regulations resources: - Guidelines for the removal, destruction or lopping of native vegetation (DELWP, 2017) - Native vegetation removal regulations – Applicant's guide - Management standards for native vegetation offset sites	https://www.environment.vic.gov.au/native-vegetation/native-vegetation-removal-regulations
Hydrological buffer resources: - Collaborative Australian Protected Areas Database (CAPAD) (DCCEW, 2022) - MapshareVic. Property, Forest, Public Land and Water maps for Victoria (DEECA, 2024) - Bureau of Meteorology (BoM) Groundwater Dependent Ecosystem Atlas (BoM, 2024)	https://www.dcceew.gov.au/environment/land/nrs/science/capad https://mapshare.vic.gov.au/mapsharevic/ http://www.bom.gov.au/water/groundwater/gde/map.shtml
Irrigation Development Plan guidance and resources - Development Information Packages - Specifications for hydrogeological investigations (Aquaterra, 2010a and/ or RMCG 2025) - Guidance on hydrogeological terminology and vegetation buffer description (Aquaterra 2010a; Aquaterra 2010b and/ or RMCG 2025) - Process for assessing applications for maximum application rates - Standard soil irrigation management units (Nutrient, 2023) - Mallee hydrogeological buffers review (RMCG 2025)	Available from Irrigation Development Coordinator
Works Plan guidance and resources Dam safety emergency plan resources	https://www.water.vic.gov.au/water-sources/victorias-dams/dam-safety-guidance

16 Appendix 10

Take and use licences

A take and use licence (T&UL) is a fixed term entitlement to take and use water from a waterway, catchment dam, spring, soak or aquifer. Each licence is subject to conditions set by the Minister and specified on the licence.

T&ULs are issued and managed according to policies set by the Minister for Water (Policies for Managing Take and Use Licences). The policies include a list of standard conditions applicable to Take and use licences set out in Schedule 2 of the policies.

The issue and trade of groundwater licences is also subject to guidelines as detailed in the Ministerial Guidelines for Groundwater Licensing and the Protection of High Value Groundwater Dependent Ecosystems.

T&ULs are issued and managed according to caps on the resource, known as permissible consumptive volumes. The Department of Energy Environment and Climate Action has released guidelines on how to determine resource share such as caps in groundwater and unregulated systems.

More information is available at:
<https://www.waterregister.vic.gov.au/water-entitlements/about-entitlements/take-and-use-licences>.

Notes

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