

Fact Sheet

Irrigation and Drainage Plans

Introduction

Irrigation developments must meet the standards necessary to minimise the impacts of water use on other persons and the environment. This 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 meet the objective of minimising harmful side-effects. Their standards are described in Schedule 1 of Ministerial Determination for Standard Water Use Conditions.

<https://www.waterregister.vic.gov.au/water-entitlements/about-entitlements/water-use-licences>

Irrigation and Drainage Plan required inclusions

A Maps of the proposed development, overlain aerial imagery, which clearly identifies:

- Property boundaries;
- Areas to be irrigated (irrigation footprint);
- Type and location of crops to be planted;
- Location of existing infrastructure e.g. buildings, roads, water storages;
- Location of proposed features;
- Existing native vegetation wetlands and other environmental features;
- Buffers for retained native vegetation.
- Legends for all symbology used on maps, scale bar and north point.
- Where relevant, a drainage plan relevant to existing native vegetation wetlands and other environmental features

B A topographical survey including:

- Elevation data and appropriate contours.

NOTE: for check-bank, flood and furrow irrigation systems the maximum slope allowable is 1:50.

C Soil Assessment

For pressurised irrigation systems which include drippers, microjets, centre pivots, lateral move irrigators and fixed sprays, detailed soil survey information is required on Mallee soils as they can be extremely variable.

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Soil profile survey

In the Mallee the soil survey provides information which will assist the designer to prepare an irrigation system capable of applying an accurate irrigation volume to match the water holding ability of the rootzone thereby reducing the risk of waterlogging and salinity.

The soil information required to be provided on an overlay of the property and soil data sheet must be obtained or validated by a registered soil surveyor who will provide a survey to the prescribed standards.

Written Report

A written report must be provided which includes:

- Description of topography 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;
- Land capability;
- Soil amelioration proposals;
- Soil chemistry; and
- Hydrology – if relevant and the authority requires it.

D Irrigation and design management

All developments will require:

- Anticipated crop water requirements and proposed maximum application rates (see Schedule 2 – <https://www.waterregister.vic.gov.au/water-entitlements/about-entitlements/water-use-licences>);
- Irrigation system specifications;
- An identified supply point to the irrigated area; and
- Proposed irrigation scheduling arrangements.

The irrigation design must be completed by a certified irrigation designer in accordance with the following principals:

- 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 soil capability 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.



Open soil pit as part of a property soil survey.

E Arrangements for drainage disposal

The Irrigation and Drainage Plans must include an appropriate contingency drainage design.

The need for subsurface and/or surface drainage scheme and re-use system must be considered. A design is to be developed for the appropriate system(s) including the:

- Volume 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; and
- Location of pumps, discharge or re-use points.

Upstream of the Nyah pumps, if the weighted soil salinity is greater than 600EC, the irrigation and drainage plan must include a preliminary sub-surface drainage plan identifying an appropriate contingency area for evaporative disposal in the event that subsurface drainage is required. Any land identified as being required for evaporative disposal must not be developed for irrigation.

F Biodiversity protection arrangements

The Irrigation and Drainage Plan must identify those parts of the property and adjacent land where the use of water for irrigation on the property poses a risk to wetlands, native vegetation, or the habitat of native animals.

For those areas, the Irrigation and Drainage Plan must specify appropriate preventative measures, appropriate monitoring parameters, appropriate monitoring equipment and appropriate locations for the equipment to be installed to reduce the risk to within acceptable levels. This includes buffers between irrigated areas and native vegetation, nominated water table monitoring bores or piezometers.

The plan must also specify buffer marking and maintenance arrangements, equipment maintenance standards, data reading, recording, reporting and auditing requirements, correction action thresholds, corrective action procedures and corrective action time limits.

NOTE: The granting of a water-use licence does not remove the need to apply for any authorisation or permission necessary under any other Act with respect to the development.



Overhead crop irrigation.