

PLANNING NEW ON-FARM WATER STORAGE?

Case study

The following case study presents a possible approach a Tasmanian farmer might take when considering constructing a new farm dam. The case study explores the processes involved in applying for a dam permit and water licence. Please note this is an example only.

A Tasmanian farmer contacts a consultant about the possibility of constructing a large-scale dam on their property for irrigation purposes. They advise they have a creek with a good gully that has ample water to fill a big dam. There are existing dams on neighbouring properties located on the same creek further downstream, and they advise there is a lot of water that flows down the creek in winter. They are proposing to construct a dam in the vicinity of 200ML. Where do they start?

1 Using the Water Assessment Tool (WAT) a consultant should first identify the likely water availability from the creek that is being proposed to be dammed. The consultant needs to refer to the WAT at the dam location, but also at other key locations further down the watercourse, as existing allocations may already exist downstream of the proposed dam site.

If the WAT is showing at least 200ML available:

- below any existing allocations, and
- at major locations on the watercourse such as the sub-catchment location (where the creek joins the next major watercourse), and
- at the outlet of the catchment where it enters the sea,

then it is likely a water allocation may be possible.

Most new water allocations issued in Tasmania are now only for winter periods. The proponent will only be able to take water into the dam during the winter months (1 May to 30 Nov) and will have to pass water through the dam (via the dam's outlet pipe) over the summer period.

For this example, there may be some other environmental issues that need to be addressed, but given there are already existing dams on this watercourse this may not be required.

2 At this point the consultant may consider contacting staff from DNRE to check that the WAT outputs are correct and that an application for a potential water allocation may be possible. The consultant may

also advise DNRE of the potential dam site being proposed and get some feedback from DNRE staff on any potential issues they may consider for that location. The consultant will know early on in the process that a dam in this location will be classed as a Division 3 dam (rather than Division 4) as it will be located on a watercourse, so they will follow the Division 3 dam application process.

3 The consultant would then look at undertaking a site visit to determine what additional information will be required to be submitted as part of the application to DNRE. The consultant will undertake visual assessments to determine if the dam site is likely to trigger additional reporting requirements, such as flora and fauna surveys, threatened vegetation community assessments and/or potential engineering requirements for example.

4 Once the consultant is satisfied the proposal has merit, the water licence application and accompanying assessment report could be submitted to DNRE. Submission at this point is to determine whether water allocation will be offered before the farmer commits to undertaking further dam investigation works. Whilst the water licence application can be submitted at the same time as the dam application (later in the process), it does make sense to try and establish the water allocation early on in the process. It needs to be noted DNRE may impose a condition on any new water allocation that it may be rescinded if not utilised within a specific period of time.

FARM DAM CONSTRUCTION AND WATER LICENSING

5 In this scenario, given the dam proposal will be over 100ML, the dam is required to be surveyed to determine things such as the maximum wall height of the dam, dam capacity, volume of earthworks required to construct the dam wall, etc. Even for dams under 100ML, and whilst not a requirement, it is good practice to have a proposed dam site surveyed to get an accurate estimate of the capacity of a dam, and in particular, the earthworks required to construct the dam wall. Most dam construction companies need to know the quantity of earthworks to construct the dam wall so that they can quote accurately.

6 The Consequence Category Assessment (CCA) for the dam needs to be undertaken early on in the process. This needs to be undertaken once the height and capacity of the dam are established. This assessment determines what might happen if the dam has a catastrophic failure of the wall, ie. any potential loss of life that may occur by inundating houses, roads etc. below the dam. This is a theoretical assessment, for a dam of this size, and depending on its location, it may need to include a detailed dam break analysis. This involves a computer simulation of a dam break to determine flood velocities and where the water levels may get to if the dam failed, i.e. does it flood any major roads, or houses? etc.

The outcome of the CCA assessment determines the level of engineering (if any) and construction requirements to build the dam wall.

7 To ensure there is enough material onsite to construct the dam wall, a geo-technical investigation is the next step. If any dam has a wall over 10 metres high or has a consequence category of significant or higher, a level of engineering is required to address the design, supervision and construction of the dam.

8 Other common reports that are often required, based on the dam site location, include:

- Detailed engineering investigation and design
- Aboriginal heritage assessment
- Botanical survey and fauna habitat assessment
- Acid sulphate soils risk

9 Any additional supporting documentation will be added to the above reports so that all of the areas of the DNRE dam works assessment decision framework have been addressed. This information, along with a dam works application form, can then be submitted to DNRE for their consideration.

10 Once this information is submitted to DNRE, and provided they consider the application is complete, they will advertise the application. After 14 days, if there are no representations a dam permit application will be assessed. This assessment process generally takes anywhere from 6 to 12 weeks for approval, providing all the information submitted meets their requirements.

11 For this case study, the dam would be considered high-risk and require a Division 3 permit. A dam permit for a Division 3 dam once issued is valid for two years (i.e. you have two years to complete construction), and potentially you can get a two year extension (therefore have up to four years to complete construction on a Division 3 permit).

Further information

Scan to find a consultant to support you in the process:



Scan to learn about the Water Assessment Tool:



Scan for the Tasmanian farm dam construction, low risk v high risk factsheet:



Scan to learn more about water licensing:

