GUIDE TO USING THE IDAS DEVELOPMENT APPLICATION FORMS

Guide 14

Assessment of a referable dam

This guide has been prepared to help applicants and local governments determine if an application requires assessment by the Department of Natural Resources and Water (NRW) for a referable dam under the *Water Act 2000*.

A full definition of a referable dam is given later in this guide, but in a few words a referable dam is '*a dam that would threaten life if it failed*'.

Assessable development

Schedule 8, part 1, table 4, item 4 of the *Integrated Planning Act* (IPA) specifies that carrying out the following kinds of operational work is assessable development -

- construction of a referable dam; and
- works that will increase the storage capacity of a referable dam by more than 10%.

NRW as assessment manager

If an application is made for operational work for a referable dam, as described above, NRW is the assessment manager if -

- the application does not involve any other assessable development, apart from -
  - operational work that allows taking or interfering with water under the *Water Act 2000* (see Guide 15);
  - the clearing of native vegetation on freehold land (see Guide 12); and
- none of the development applied for is assessable under the local government's planning scheme; and
- there is no other assessment manager prescribed for the development (eg. the Port Authority is the assessment manager for strategic port land).

NRW as referral agency

If an application includes operational works for a referable dam, as described above, but the criteria for NRW being the assessment manager is not satisfied, the application must be referred to NRW for assessment as a concurrence agency.

What is a referable dam?

The definition of a referable dam is contained within the *Water Act 2000*. Dams that contain hazardous waste and weirs without variable flow control structures on their crest are specifically excluded from being referable dams.

A water dam is not automatically referable because of its height and volume. Instead a procedure called a Failure Impact Assessment is generally used to determine if a water dam is a referable dam. This assessment, requiring certification by a Registered Professional Engineer, evaluates the number of people whose safety could be at risk if failure of the dam occurred. In addition, some dams have been prescribed to be referable by a regulation.

Failure Impact Assessment?

Failure Impact Assessments are required to be prepared for all proposed water dams exceeding the height and volume criteria below, and for proposals to increase a referable dam's capacity by more than 10% -

- more than 8 metres in height; and
- has a storage capacity of more than 500 megalitres;

  OR
- more than 8 metres in height; and
- has a storage capacity of more than 250 megalitres; and
- has a catchment area that is more than 3 times the dam's maximum surface area at full supply level.

The chief executive of NRW also has the power to issue to a dam owner a written notice requiring a Failure Impact Assessment for a water dam, regardless of whether the dam meets the defined height and volume criteria.

The assessment, if accepted by the chief executive of NRW, may give the proposed dam a Failure Impact Rating based on the number of people determined to be at risk in the event of dam failure. The possible ratings are -

- less than 2 people – no Failure Impact Rating;
- 2 to 100 people – category 1 rating; or
- more than 100 people – category 2 rating.

A proposed dam given a category 1 or category 2 rating will be a referable dam. Carrying out operational work for that dam, as described above, is assessable development under IPA.

If a proposed dam is not given a Failure Impact Rating it will not be a referable dam. Carrying out operational work for that dam will not require assessment as a referable dam under IPA. However assessment may be required for other reasons eg. if the work is assessable under the local government planning scheme, or the work allows taking or interfering with water under the *Water Act 2000* (see Guide 15).

NRW has issued 'Guidelines for the Failure Impact Assessment of Water Dams' to be followed in preparing Failure Impact Assessments. The guidelines are accessible at the NRW website given at the end of this guide.

Material that must be submitted with the application

All referable dam development applications must be accompanied by evidence that the chief executive of NRW has accepted a Failure Impact Assessment for the dam.

If a water entitlement is required to operate the dam, the application must also be accompanied by NRW's written consent to the application being made (see Guide 15).

Supporting information to be submitted with the application

NRW has published the Queensland Dam Safety Management Guidelines, containing information about the requirements for construction and on-going management of referable dams. These guidelines are available at the NRW website given at the end of this guide.

Development applications for referable dams will be assessed against the requirements of the guidelines, amongst other things. It is therefore recommended that applicants take the requirements of the guidelines into account when preparing supporting documentation for their development application.

Because failure of a referable dam could put population at risk, NRW is likely to apply requirements to the development of referable dams to minimise the risk of dam failure and thus protect the community from dam failure. In particular, proponents will be expected to demonstrate in their supporting documentation that -

- the proposed works comply with current engineering standards and accepted practices;
- the proposed works will be operated in a safe manner;
- the condition of the works will be assessed on a regular basis; and
- preparations will be made for responding to emergency situations at the dam.

The supporting documentation submitted should also include -

- a summary of the principal data about the dam;
- plans of the dam and associated works drawn on a contour plan of the site; and
- arrangements, elevations and sections showing details of the proposed structures, including foundation details.

Following is a list of issues that proponents may need to consider while preparing an application. The list is not exhaustive. Careful consideration should be given to the proposal and its potential impacts to determine which issues are relevant to the application. It is expected that consideration of these issues will be site and dam type specific.

Design Issues

- consequence Assessment;
- hydrologic and Hydraulic Data and Analyses;
- spillway Adequacy;
- foundation Conditions and Treatment;
- suitability of Construction Materials;
- embankment Design and Stability Analyses;
- instrumentation installed;
- construction Specification.

Operation and Maintenance

- personnel Training and Procedural Issues;
- emergency Action and Incident Reporting;
- critical Operating Procedures.

Surveillance

- monitoring;
- data Collection, Management and Evaluation;
- dam Safety Inspections.

Emergency Action Planning

- conditions which may endanger integrity of the dam;
- procedures to be followed;
- involvement of emergency management agencies.

Since dams engineering is a diverse and complex science, it is expected that qualified and experienced professionals will be closely involved in preparing the proposal and supporting information that accompanies the application.

For more information

For more information about referable dams, call the Dam Safety Unit of NRW on 3224 7215, or visit the NRW website www.nrw.qld.gov.au/compliance/wic/referable_dams.html