



Failure impact assessment

The referable dam provisions in the *Water Supply (Safety & Reliability) Act 2008* (the Act) came into effect on 1 July 2008. These provisions were formerly contained in the *Water Act 2000*.

This fact sheet explains the failure impact assessment provisions of the Act.

What is a failure impact assessment?

A failure impact assessment evaluates the population at risk if failure of a water dam were to occur. A dam is considered to have failed if there is a physical collapse of all or part of the dam or an uncontrolled release of any of its contents.

Each assessment must be completed in accordance with the Department of Environment and Resource Management's *Guidelines for failure impact assessment of water dams*, and certified by an engineer before being submitted to the chief executive of the Department of Environment and Resource Management (DERM).

The assessment, if accepted by DERM, may give the relevant dam a failure impact rating, based on the population at risk, according to the following guidelines:

- less than two people—no failure impact rating
- two to 100 people—category 1 rating
- more than 100 people—category 2 rating.

A population at risk is based on default populations for places of occupation in the risk area—for example, residences, caravan parks or schools.

The use of a failure impact assessment

Water dams given a category 1 or category 2 failure impact rating by a failure impact assessment accepted by the chief executive are classified as referable dams under the Act. If a water dam is not given a failure impact rating, it is not a referable dam.

Classification of a water dam as a referable dam is important because:

- if there is a proposal to construct a referable dam, or increase the storage capacity of a referable dam by more than 10 per cent, a development permit approving the works is required before work can begin
- if the dam is a referable dam, the chief executive has power under the Act to impose or change safety

conditions on the dam, regardless of whether the dam owner has a development permit for the dam

- if the dam is a referable dam, or likely to become one if a failure impact assessment were to be carried out, the chief executive also has power under the Act to issue emergency directions about the dam.

When a failure impact assessment is required

Under s. 343(1) of the Act, a failure impact assessment is required for a proposed water dam that meets the following height and volume criteria ('the defined height and volume criteria'):

- more than eight metres in height; and
 - storage capacity of more than 500 megalitres
- or
- more than eight metres in height; and
 - storage capacity of more than 250 megalitres; and
 - catchment area is more than three times the dam's maximum surface area at full supply level.

The Act contains definitions for the terms 'height' and 'full supply level'.

The chief executive also has the power under s. 343(2) of the Act to issue a written notice to a dam owner requiring a failure impact assessment for any water dam, regardless of whether the dam meets the defined height and volume criteria. Notices can be given for existing dams or dams under construction. However, notices are only issued if the chief executive reasonably believes the dam will be given a category 1 or category 2 rating.

Finally, applicants for development permits for works that will increase the storage capacity of a referable dam by more than 10 per cent also need to have completed a failure impact assessment for their dam.

Further failure impact assessments

If a dam is given a category 2 failure impact rating, further assessments are not required as it is considered unlikely that such a dam would be given a lower rating if reassessed. However, if circumstances change such that the dam owner believes the dam should no longer be given a category 2 rating, it is possible for the dam owner to voluntarily submit a new failure impact assessment.





If a dam is given a category 1 failure impact rating, a further assessment must be carried out within five years of the last assessment.

If a dam is not given a failure impact rating (i.e. it is not referable) but it meets the defined height and volume criteria, a further assessment must be carried out within five years of the last assessment. Each five-year period runs from the date the last assessment was accepted by the chief executive.

If a dam is not given a failure impact rating and it does not meet the defined height and volume criteria, further five-yearly assessments are not required.

Carrying out a failure impact assessment

Under the Act, dam owners are responsible for having failure impact assessments prepared. DERM's *Guidelines for Failure Impact Assessment of Water Dams* set out how a failure impact assessment must be carried out and the default populations for places of occupation.

Under s. 342 of the Act, a failure impact assessment must be carried out in accordance with the guidelines and certified by an engineer registered under the *Professional Engineers Act 2002*. An assessment cannot be certified by an engineer who is:

- the owner of the dam being assessed
- an employee of the owner of the dam
- the operator of the dam
- an employee of the operator of the dam.

Certifications should include the engineer's name and registration details.

The acceptance process

A failure impact assessment must be submitted to the chief executive for acceptance. It may be rejected or a review may be required if it is incorrect or incomplete or not completed in accordance with the guidelines.

The owner of the dam will be given written notice of the chief executive's decision. If an assessment is not accepted, the notice may require an owner to prepare a new assessment, or have the submitted assessment reviewed, corrected or completed.

Before requiring a review of, or rejecting, an assessment, the chief executive can request additional information about the assessment.

If an assessment is not accepted, there is provision under Chapter 7 of the Act for a dam owner to apply to the chief executive for a review of the original decision about the failure impact assessment (to obtain a 'review decision'). If the owner is not satisfied with the review decision, there is also provision under the Act for an appeal to the Planning and Environment Court.

Paying for a failure impact assessment

If a failure impact assessment was required because of a notice issued under s. 343(2) of the Act and the dam that is the subject of the notice is assessed as not having a category 1 or category 2 failure impact rating, the chief executive will pay the reasonable costs of:

- preparing and certifying the assessment
- any review of the assessment that occurs under s. 351 of the Act.

In all other cases, the owner of the dam pays the cost of the failure impact assessment.

Further information

For more information about dam safety issues, email the Office of the Water Supply Regulator at: <owsr.enquiries@nrw.qld.gov.au>.

The *Water Supply (Safety and Reliability) Act 2008* and related regulations can be obtained from the Office of the Queensland Parliamentary Counsel website: <www.legislation.qld.gov.au>.

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For further information phone 13 13 04