



Levee maintenance guide

This guide is for land owners and land managers who already have a levee on their property for flood risk reduction



What is a levee?

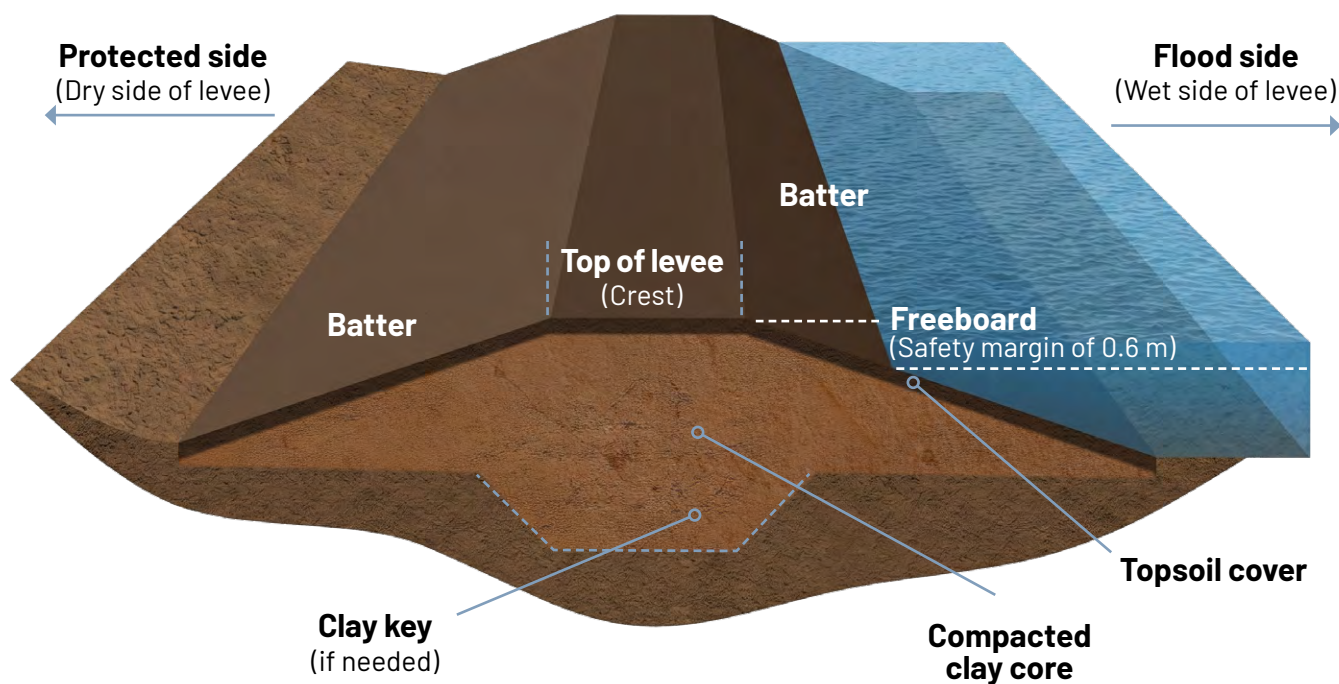
Levees are artificially raised or constructed embankments (walls) for the purpose of obstructing the flow of water over the surface of land. Levees reduce the likelihood of flooding and the risks of flooding to life, assets and the environment. A levee can be permanent or temporary.

Full confinement of floods by levees is not possible or desirable. They are designed to hold back water to a certain height (the design flood event) and may be overtopped by floodwaters exceeding this level. A buffer or 'freeboard' is recommended to be included in the design so that during operation this acts as a buffer for unpredictable localised conditions like wind-driven waves.

Levees may fail before floodwaters reach the top of levee if not adequately maintained. As the existence of a levee may create a perceived level of protection, poorly maintained levees can reduce the level of preparedness and create a false sense of security. Monitoring the condition of your levee during normal (not flood) times helps to guide maintenance. In the event of a flood, levee failure could have greater impacts than overtopping or even the absence of the levee.

Routine preventative monitoring and maintenance is important to keep levees in good condition. Additional larger-scale maintenance may be required from time to time depending on local conditions, including after a flood if the levee was holding back floodwaters.

Typical earthen levee structure



Monitoring and maintenance

Levees require both monitoring and maintenance.

Monitoring the condition of your levee during normal (not flood) times helps guide maintenance, from low-cost short-term actions to more significant works undertaken from time to time.

Monitoring may comprise looking at the crest and batter condition for:

- trafficability
- settlement, depressions and deformation
- erosion, ruts and surface damage
- cracking
- animal burrows and subsurface voids
- seepage and wet areas on the protected side of the levee
- vegetation and weed growth
- drainage and deformations at drainage outlets
- deformations at interfaces with fences, crossings or other services.

Surface depressions



Batter slope erosion



Surface erosion



Voids



Vegetation/ weed growth



What not to do with your levee

- Do not plant deep rooted plants, like shrubs and trees. Vegetation like grass that is shallow rooted can grow in the topsoil without impacting levee performance.
- Do not allow stock, like sheep and cattle to graze on the levee.
- Do not dig into, excavate or cut through the levee for access or drainage purposes.
- Do not construct structures on or adjacent to the levee.
- Do not remove the levee.

All of these activities will create weaknesses in the levee that could impact how well it holds back flood water.

Practical minor maintenance that can be done regularly by land owners and/or land managers at low cost:

Vegetation and weed management

- mowing / slashing when seasonally appropriate
- spraying weeds when seasonally appropriate and with appropriate herbicides for use near water.

More information on spraying weeds near water can be obtained from your local Landscape Board.

Minor surface repairs

- repair ruts, erosions and cracks
- filling burrows and small voids
- keeping drainage lines clear
- maintaining access tracks by preventing damage from vehicles and stock.

What if my levee requires repair?

If you are concerned about the condition and stability of your levee then it is best to get it assessed by a qualified Geotechnical Engineer who can provide advice for repairing or upgrading your levee.

For flood levees used as part of regional-scale flood risk reduction, more information may be available from your local council or the Department for Environment and Water.

Permits may be required when repairing your levee. You can check with your local Landscape Board or Council.

More information on levees can be obtained by visiting our **[DEW flood webpages](#)**.

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