

What are stopbanks?

Stopbanks are compacted earth banks designed to contain rivers and streams in flood. Stopbanks should be of regular dimensions having an even top and uniform batters clothed in a thick healthy sward of grass.

Where would I find stopbanks?

Stopbanks are found beside rivers and streams that flood nearby flat land during heavy or prolonged rain. Some stopbanks can be a long way back from the river and may only prove their worth over a long period of time, perhaps 50 years or more. Some river systems have a single line of stopbanks to safeguard surrounding land; others have a second line of stopbanks that act as a back up if the first line of defence fails.

How effective are they?

Where a major river like the Wairau is close to a town the size of Blenheim, stopbanks are designed to safeguard the town from most floods. No matter how well stopbanks are constructed and maintained, they are only as strong as the weakest link and are vulnerable to damage from a number of different sources:

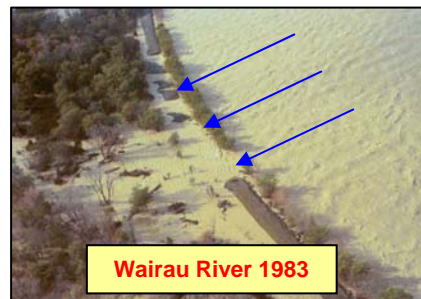
- **Vehicle damage.** Unfortunately stopbanks are a magnet for trail bikes and 4WD vehicles. The ruts these vehicles leave can turn into failure points during a flood, especially if the river rises over the top.
- **Animal damage.** While occasional controlled grazing by stock can be beneficial to a stopbank (helping maintain a healthy grass cover), the continual presence of stock can reduce grass cover and lead to ruts forming, weakening the stopbank. Animal holes also create weak points.
- **Buildings.** Excavating or digging into the base of a stopbank will weaken the structure at that point, making it more likely to fail during a flood. Even constructing buildings close to a stopbank can be a hindrance, potentially limiting access during a flood.

"Stopbanks are only as strong as the weakest link"

• **Trees/ gardens.** While the urge to beautify the surrounding environment is understandable, trees and shrubs have several detrimental effects on the stopbank:

1. They don't allow a healthy grass cover on the bank. Good grass cover is essential to the sound structure of a stopbank, even on the side facing away from the river. If floodwaters reach the level at which they overtop the stopbank, a lack of grass cover at any point makes the formation of a breach more likely, flooding nearby properties.
2. The roots of trees and shrubs create a weakness in the stopbank. During a flood, water can begin flowing through that weak patch, often leading to rapid failure. Trees can also topple during heavy wind and rain creating a hole where the water can surge through.
3. Shrubs and trees make it hard to judge how sound the stopbank really is. Given the considerable length of stopbanks Marlborough District Council is responsible for, the ability to undertake quick visual inspections, especially after floods when repairs may be needed, is essential. Often a series of floods occur in a short space of time and the ability to quickly assess and repair damage is vital for people's ongoing safety.

Below: Stopbanks alongside a river being overtopped. 'Flat stopbank tops' and 'good grass cover' reduce the likelihood of the bank breaching in this situation.



Who owns stopbanks?

Stopbanks are owned and maintained by Marlborough District Council, except where; a) some stopbanks are privately owned, or b) changes in government funding has resulted in some protection works no longer being maintained by Marlborough District Council and the maintenance of those works is then the choice of the landowner.

If I live next to a stopbank, how can I help it remain sound?

Marlborough District Council is responsible for stopbanks along the Wairau, Omaka, Fairhall, Opawa and Taylor rivers and some drains to name a few. Any contribution you can make to ensure that these stopbanks continue to do their job well is greatly appreciated. Both you and the wider community will benefit. Even stopbanks that have been well engineered and constructed are vulnerable if abused. If you observe any stopbank damage such as a tree which has fallen and created a hole or a line of rutted dirt bike or 4WD trails, persons or vehicles damaging stopbanks, please report it to Marlborough District Council Office Ph. 03 520 7400.

What are the penalties for damaging a stopbank?

The ability of a stopbank to remain intact, even when water runs over it, is critical during a flood. The actions of one individual can result in an entire community being flooded. Because of the importance of stopbanks and the vulnerability of the whole system to damage at just one point, persons or organisations found to have damaged a stopbank are liable for a fine of up to \$10,000, (Soil Conservation and Rivers Control Act 1941, S154). The cost of flooding to the community in terms of lost power and phone lines, disrupted sewerage and water pipes, damaged property and danger to people, stock and livelihoods is immeasurably higher.