Flood Protection and Drainage Bylaw

Let us know what you think

BAY OF PLENTY REGIONAL COUNCIL
TOI MOANA

Contents

Find out more at www.boprc.govt.nz/drainagebylaw

The Flood Protection and Drainage Bylaw is a regulation that safeguards flood protection and land drainage assets from damage or misuse.

It applies to assets owned or managed by Regional Council:

- drains
- defences against water
- erosion protection works
- floodways

These assets protect people, property and livelihoods from river flooding and problems associated with a lack of land drainage.

The Bylaw outlines when you need to talk with Council and if necessary apply for a Bylaw Authority. This ensures we work together to develop the best approach to managing activities within Bylaw Applicable Areas.

Stoplogs, Muriwai Drive boat ramp – Whakatāne

Eastern Drain - Rangitāiki Plains

Erosion Protection, Otara River

Pump Station, Maketu

Bay of Plenty Regional Council's flood protection assets include:

378km *of stopbank*

856km *of rock edge protection*

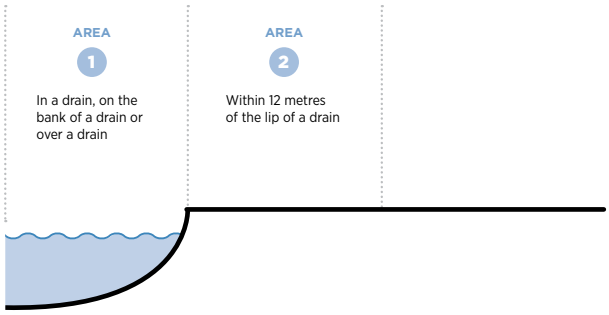
496km *of waterways (drains and canals)*

470km *of trenched willows*

Find out more at www.boprc.govt/drainagebylaw

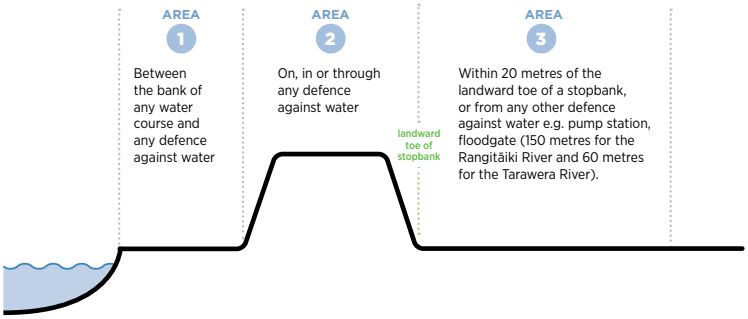
Current Bylaw Applicable Areas

DRAINAGE SCHEME DRAINS – FLOOD PROTECTION AND DRAINAGE BYLAW APPLICABLE AREAS



Drain is any watercourse or channel (either occurring naturally or artifically constructed), or a modified watercourse, which is used to either lower the water table or divert water.

DEFENCES AGAINST WATER – FLOOD PROTECTION AND DRAINAGE BYLAW APPLICABLE AREAS



Defence against water is a term used to describe a man-made structure (for example, a stopbank, weir, floodgate or pump station) intended to protect against flooding.

A more detailed definition of 'defence against water' is contained in the draft Bylaw.

The Local Government Act 2002 requires all bylaws to be reviewed every ten years.

This ensures the rules are:

- still fit-for-purpose
- informed by the latest science and data
- informed by experience from previous flood events
- informed by present issues and risks e.g. climate change projections, land use changes and increased pressure from development

The Flood Protection and Drainage Bylaw must be reviewed and adopted by June 2020.

October - November 2019
Early engagement feedback

We are here

March 2020
Draft Bylaw notified for formal public submissions

April 2020
Formal public submissions received

Late May 2020
Submissions considered and hearings held

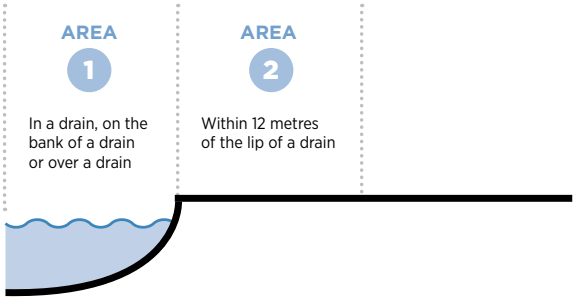
June 2020
Bylaw operative

We're working hard to let people know about the Bylaw review process and to provide opportunities to feedback thoughts to Council.

Drains

The Bylaw Applicable Areas for drains are not changing.

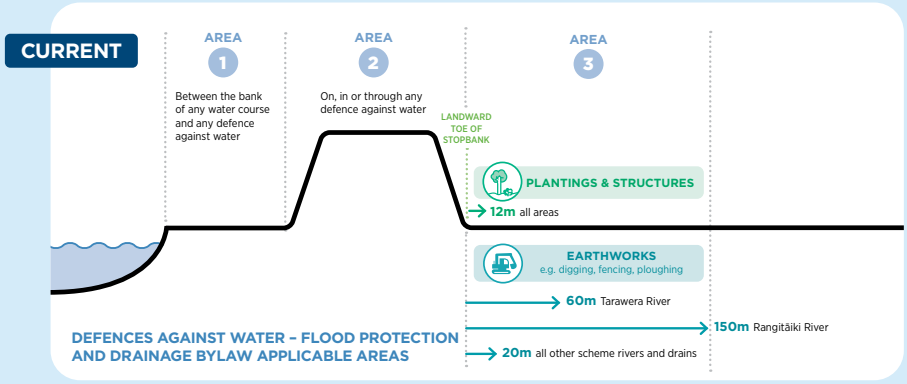
DRAINAGE SCHEME DRAINS – FLOOD PROTECTION AND DRAINAGE BYLAW APPLICABLE AREAS



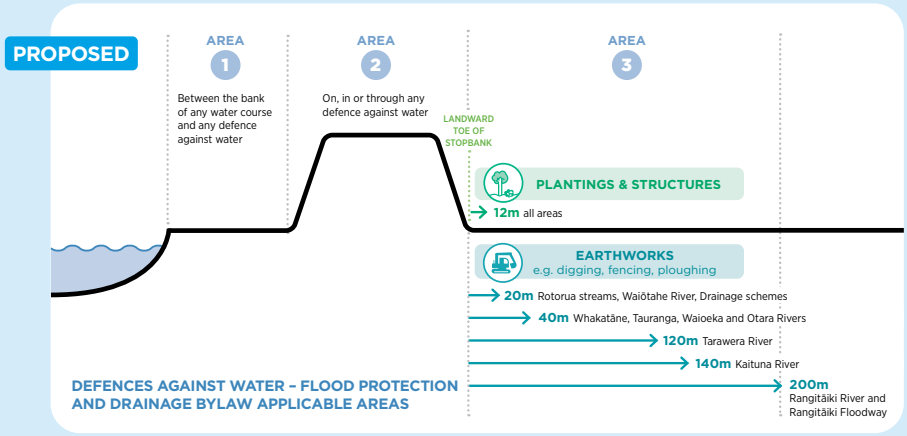
We want to make the existing clause around stock access to drains clearer.

We are proposing no stock access to any drain, or the bank of any drain, without prior written authority.

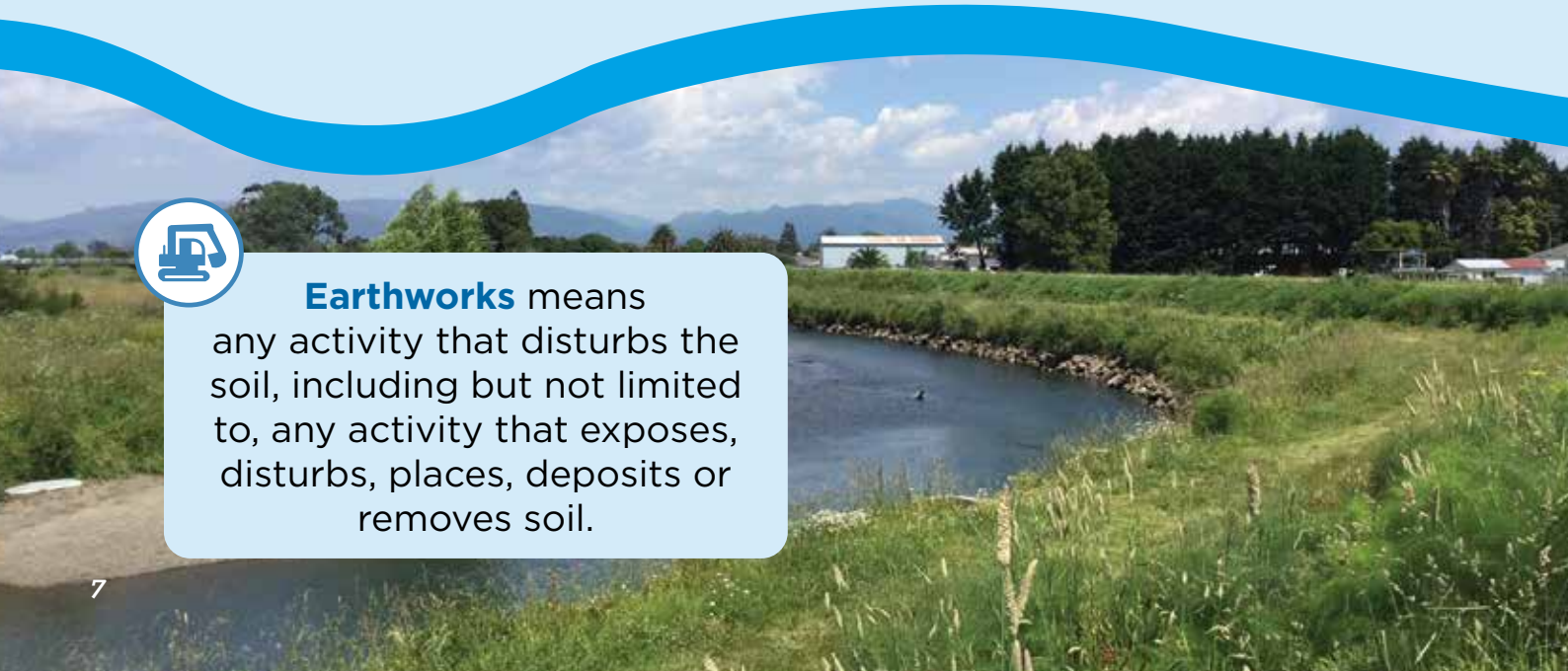
Defences against water



No change to Bylaw Applicable Areas 1 and 2.



Larger distances are proposed for earthworks in Bylaw Applicable Area 3.



Earthworks means any activity that disturbs the soil, including but not limited to, any activity that exposes, disturbs, places, deposits or removes soil.

Here's a summary of the proposed changes to Bylaw Applicable Area 3

Waterway	Current distance (metres)	Proposed distance (metres)
Lower Kaituna River	20	**140**
Rotorua streams (Waingaehe, Puarenga, Utuhina, Mangakakahi, Otamatea, Waiowhiro, Ngongotahā, Waitetī, Ōhau Channel)	20	**20**
Tarawera River	60	**120**
Rangitāiki River (including Rangitāiki Floodway)	150	**200**
Whakatāne (including Wairere Stream and Waioho Canal), Tauranga, Waioeka and Otara and Rivers	20	**40**
Drainage scheme drains and canals	20	**20**

To determine these distances we took into account:

- Historic data and staff observations from previous flood events
- Assessment of geotechnical investigations around the region
- The results of computer-generated models that predict soil, river and asset performance during a flood event

Erosion protection works

Mechanisms to safeguard erosion protection works are weak in the current Bylaw, so these important assets have specific mention in the proposed review.

Except with prior written authority no person shall:

a. Remove, damage, or allow stock to damage, any erosion protection works that have been placed, or planted, adjacent to a river by the Council or its predecessors.

b. Dump or deposit any item on, in or beside any erosion protection works.

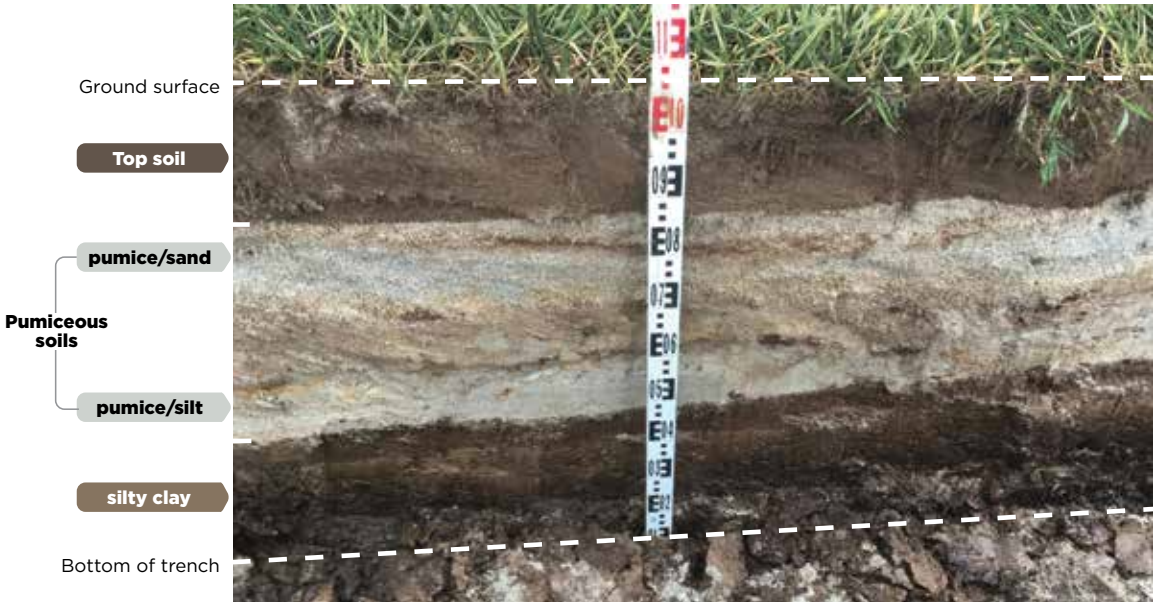
Erosion protection works is a term to describe assets, (for example buffer zones and buffer zone plantings, river edge plantings, fencing, rockwork, and trenched willows) which are used to:

- Protect stopbanks and natural channel banks from erosion.
- Maintain channel stability.
- Reduce sediment deposition.

Additional clauses applying to areas with pumiceous soils

The lower reaches of the **Kaituna**, **Rangitāiki** and **Tarawera Rivers** have layers of pumiceous soils that are more susceptible to piping failures beneath the stopbanks during flood events. The purpose of these specific clauses is to minimise the risk of such failures occurring.

SOIL PROFILE FROM NEAR THE CONFLUENCE OF WAIARI STREAM AND KAITUNA RIVER

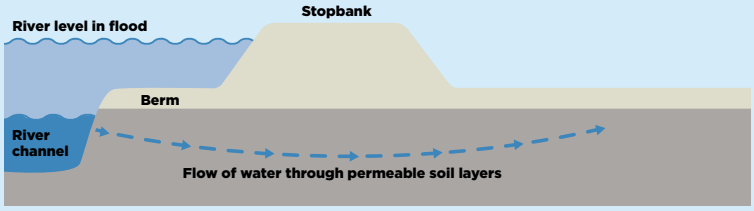


Pumiceous soils mixed with organic soils – Kaituna

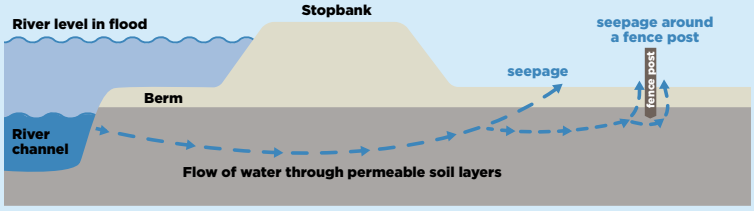
Pumiceous soils

Pumiceous soil – Rangitāiki Plains

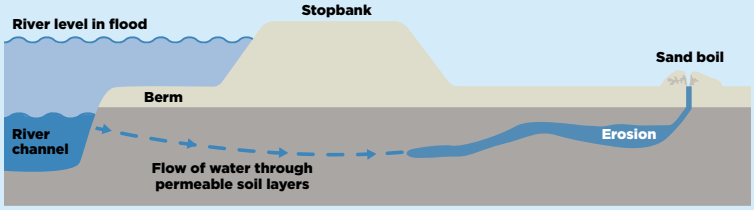
Stopbank seepage and piping



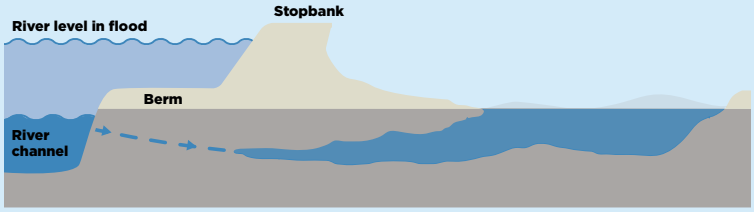
As river levels rise during a flood event there is more pressure on the river bank, berm and stopbank and this increases the rate of water flowing through permeable soil layers beneath the stopbank. (Permeable soils allow water to easily flow through them e.g. sand, pumice.)



This water can seep out to the ground surface when a permeable soil layer comes close to the surface, or where something penetrates into a permeable soil layer creating a pathway to the surface (e.g. fence post, building foundations or a tree).



When seepage flow is sufficient enough to carry soil particles to the surface we see 'sand boils' forming and resulting in 'piping' or backward erosion of soil from the foundations of the stopbank.



Piping can enlarge very quickly and potentially result in stopbank instability and collapse.

Ground disturbing activities in the vicinity of a stopbank can increase the risk of piping developing.

Piping usually develops where there are soils with contrasting permeability. This is common in the Bay of Plenty with permeable volcanic and sandy alluvial deposits layered between impermeable peat, silt and clay layers. In the lower Kaituna, Tarawera and Rangitāiki Rivers however these soils are also underlain by pumiceous, highly permeable, sands and gravels.

Ground disturbing activities can include:

- Digging
- Fencing
- Foundations
- Ploughing
- Infrastructure for land use intensification e.g. orchard development
- Shelter belt planting

If there is any risk of posts penetrating permeable sand layers, and creating a seepage path to the surface, a filter collar of NZTA F/2 drainage aggregate can be installed around the post at ground level. Filter collars allow water to escape while trapping soil particles and preventing backward piping erosion.

Additional clauses applying to floodways, spillways and ponding areas

The current Bylaw contains specific clauses for the Rangitāiki Floodway and Te Rahu Ponding Area relating to:

- structures, material or trees that are likely to obstruct the free flow of flood water
- managing vegetation cover
- earthworks, and cultivation within 20 metres of any spillway structures

We are proposing to formally identify the following floodways in the Bylaw:

Upper Kaituna River
- Mangorewa Floodway

Rotorua Streams
- Ngongotahā Floodway
- Waingaehe Floodway

Waioeka River
- Waioeka Floodway

Flood Protection and Drainage Bylaw Authority fees and charges

Those wanting to carry out activities within Bylaw Applicable Areas are required to apply for a Bylaw Authority.

This is about landowners and Regional Council working together so any impact on our flood protection assets are minimised.

Bylaw Authorities often have specific conditions that ensure that flood protection assets are safeguarded, which in turn ensures people, properties and livelihoods are protected.

	Current fees (2019)	Proposed fees
Standard application fee	$172.50	NONE
Additional charges may apply for technical review or advice	$160/hour	hourly rate to be determined annually

To wrap up here's a summary of the key proposed changes

1. Strengthening clauses related to stock access to drains
2. Extending the Bylaw Applicable Areas for earthworks in relation to defences against water
3. Strengthening clauses related to safeguarding erosion protection assets e.g. river edge plantings, buffer zone plantings, trenched willows, rock protection, fencing
4. Additional clauses related to fencing, ploughing and land use intensification in areas with pumiceous soils – the lower reaches of the Kaituna, Tarawera and Rangitāiki Rivers
5. Identification of additional floodways to be safeguarded by the Flood Protection and Drainage Bylaw
6. Strengthening compliance and enforcement provisions and processes
7. No longer charging a standard fee for Bylaw Authority applications

We want to know what you think

You can provide feedback by:

- emailing your feedback to **riversanddrains@boprc.govt.nz**
- visiting the project page at **www.boprc.govt.nz/drainagebylaw** and completing the online form
- making a written submission once the draft Bylaw has been publically notified in April 2020

We are here

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