

23 September 2024
Job No: 1093313.0000

The Property Group
Level 1
4 Akersten Street
Nelson 7040

Attention: Tina Carlson-McColl

Dear Tina

Gore District Council Proposed Plan Change EW-R13 Advice

Gore District Council (GDC) has engaged Tonkin & Taylor Ltd (T+T) to provide expert evidence for the GDC's Proposed District Plan (PDP). This letter provides advice on proposed rule (EW-R13) - Earthworks and land disturbance within areas subject to Natural Hazards (Flooding). This work has been undertaken in accordance with T+T's Letter of Engagement, 'Gore District Council – Proposed District Plan Review', dated 29 February 2024.

The proposed EW-R13 rule (Proposed Gore District Plan - November 2023) considers earthworks a Permitted Activity where:

- 1 *The work is not undertaken within the Maitara River Floodway; and*
- 2 *The work is not undertaken on the river side of a stopbank.*
- 3 *The work is within the Actual or Potential Inundation area and:*
 - a *The activity is undertaken within the mapped Stopbank Protection Area; or*
 - b *Cut depth or fill height (measured vertically) does not exceed 0.5 meters.*

We recommended that Items 1 and 2 are retained.

With regard to point 3, undertaking earthworks within an inundation area can cause an increase in flooding, either from displacing water volume or redirecting overland flow paths. The impact on flooding will depend on the location, depth and volume of earthworks and will change for different sites. In our opinion, it is possible to undertake at least some amount of earthworks within a site without causing a significant impact on flooding provided the height and volume of earthworks is limited. The height and volume of earthworks that can be carried out without causing a significant increase in flooding will change for different sites. However, based on our general experience observing floodwaters, building and interpreting flood models and assessing the effects of infilling using flood models, we recommend the following depth and volume limits:

- Cut depth (measured vertically) not to exceed 0.6 metres;
- Fill height (measured vertically) not to exceed 0.3 metres;
- A maximum volume of filling above ground level of 10 m³ per site; and

- A maximum cumulative volume of filling and excavation of 25 m³ per site in each case within any period of 10 years.

We recommended that EW-R13 point 3b is replaced with the above height and volume limits.

The limits above are generally in line with those specified by other District councils throughout NZ under Permitted Activity rules for earthworks within an inundation area.

Applicability

This report has been prepared for the exclusive use of our client Gore District Council, with respect to the particular brief given to us and it may not be relied upon in other contexts or for any other purpose, or by any person other than our client, without our prior written agreement.

Tonkin & Taylor Ltd

Report prepared by:



Richard Brunton
Water Resources Engineer

Authorised for Tonkin & Taylor Ltd by:



Tim Morris
Project Director

23-Sep-24

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