



Will be considered for release with redactions

## MIN-4296 Watercutting

31 August 2023

Provide information on watercutting to protect roads from flushing.

---

### Waka Kotahi NZ Transport Agency's response:

The annual high speed inspection of the highways includes measurement of texture and skid at 10 metre intervals in both directions. The results are analysed against the requirements of [Specification T/10](#). Any areas not meeting T/10 are investigated and programmed for appropriate intervention.

There are a number of strategies for treating the site depending on the reason for the texture loss or skid values. Watercutting is one treatment option for flushing (texture loss). While most successful over winter with the cooler road temperatures, watercutting can be successfully completed at any time. Other innovations, including large scale hot chip, have been trialled successfully. Trials using epoxy seals to inhibit the effects of bitumen flushing are also currently under trial. Other treatments including the reseal programme using sandwich seal techniques, and more recently fabric seals, are also used to treat flushing. Waka Kotahi developed a [technical note](#) in 2019 specific to flushing which may be of interest.

Some care is needed around the use of watercutting, as poorly-performed watercutting can lead to a loss of waterproofing and initiate the formation of potholes.

Ultimately, flushing is the outcome of the end of life of a surfacing through multiple layers of seal coats. These sites are included in the renewals programme for rehabilitation or recycling processes that reset the seal coats to a first coat seal. Waka Kotahi has also been developing predictive modelling software to assist with determining when a site will reach 1mm of texture to better anticipate flushing issues.

There are six individual companies supplying watercutting on road surfaces. These companies are sub-contracted through the maintenance contracts. Depending on the size of the programme, more than one supplier may be engaged. Waka Kotahi does not have direct knowledge of the number of individual watercutting units owned by each sub-contractor at present, however an informal survey of the companies in 2017 indicated at least 13 trucks with one or more different sized cutting heads available.

The costs of watercutting completed over recent financial years are:

- 2022/23 - \$5.710M (501,029m<sup>2</sup>)
- 2021/22 - \$5.927M (734,408m<sup>2</sup>)
- 2020/21 - \$6.897M (794,079m<sup>2</sup>)
- 2019/20 - \$5.084M (666,515m<sup>2</sup>)