



New Zealand's Largest Proprietary Treatment Device -

An Innovative Centralised Stormwater Treatment and Pumping Facility

The Bells Creek - Woolston catchment was identified under The Land Drainage Recovery Programme (LDRP) as an area at greater risk of flooding since the earthquakes, due to ground subsidence. The catchment is approximately 160 hectares of commercial/residential land types and includes all flows draining from Ferry Road Stormwater main, Moorhouse Avenue, Fitzgerald Avenue and part of the CBD.

This Christchurch City Council stormwater improvement project to reduce the flood risk included a pump station and a filtration system to reduce pollution of downstream waterways. With a small land footprint for the treatment system, the area needed to treat a 160-hectare catchment with heavy metals, nutrients and more suspended solids (TSS).

TREATMENT SOLUTIONS UTILIZED:

StormFilter™ vault - 570 cartridges

DESIGN OF THIS SITE:

570 cartridges were installed in a vault of 18.9m x 12.6m.

The treatment flow through each cartridge has been reduced to half of its maximum treatable flow rate to promote sediment settlement and increase the contact time between the ZPG and the contaminants of concern. With each cartridge treating 0.79 L/s, the installed treatment system can treat up to approx. 450 L/s.

Splitting the cartridge bay into five separate bays the adjustable weir installed on each bay has been helpful to distribute the sediment load evenly.

TARGET CONTAMINANTS:

Heavy metals, nutrients and total suspended solids (TSS).

MAINTENANCE:

StormFilter™ is maintained by a HydroVac to clean out the system and the cartridges are exchanged. This system is maintained by CityCare. The system was activated in June 2019. The first maintenance was the back six to seven rows of cartridges that were exchanged in August 2021 (1.5 years after activation). The remaining cartridges were exchanged in April/May 2023.

Maintenance tip: To extend maintenance you could use the HydroVac to vacuum the vault floor once every 6 months to remove built-up sediment on the vault floor which can prevent full flushing out.

