

## **Shirley vacuum wastewater a first for South Island**

SCIRT partner McConnell Dowell is more than halfway through a big project to build a Flovac vacuum wastewater system in the Christchurch residential suburb of Shirley - the first area of the South Island to use such technology.

The catchment includes about 750 houses, with 7km of vacuum main pipes in streets as well as lateral/ side connecting pipes to homes and businesses. About 6km of mains and 150 out of 195 collection chambers have been built, with a pump station and lateral pipes still in progress. It will take just over a year to complete the project, which began April 2013.

The area targeted for the vacuum system was badly affected by earthquakes with lateral spread and land-level changes. Previously, the city's wastewater network has relied totally on a gravity system with pipelines at a gradient to support downhill flow. After the earthquakes, the slope changed in many parts of the city, so wastewater was running in the wrong direction. The vacuum system will offer much greater resilience if there are further large earthquakes, especially in areas considered prone to liquefaction.

A further reason for using vacuum in Shirley was to keep excavation depths to a minimum because of the high ground water table and running sand. The system allowed McConnell Dowell to lay the pipes mostly at depths between one and 1.5 metres deep. This is shallow compared to the traditional gravity system which has pipes plunging to several metres deep to maintain the gravity-feed which takes a lot longer to access for maintenance or repair work with subsequent traffic and residential disruption.

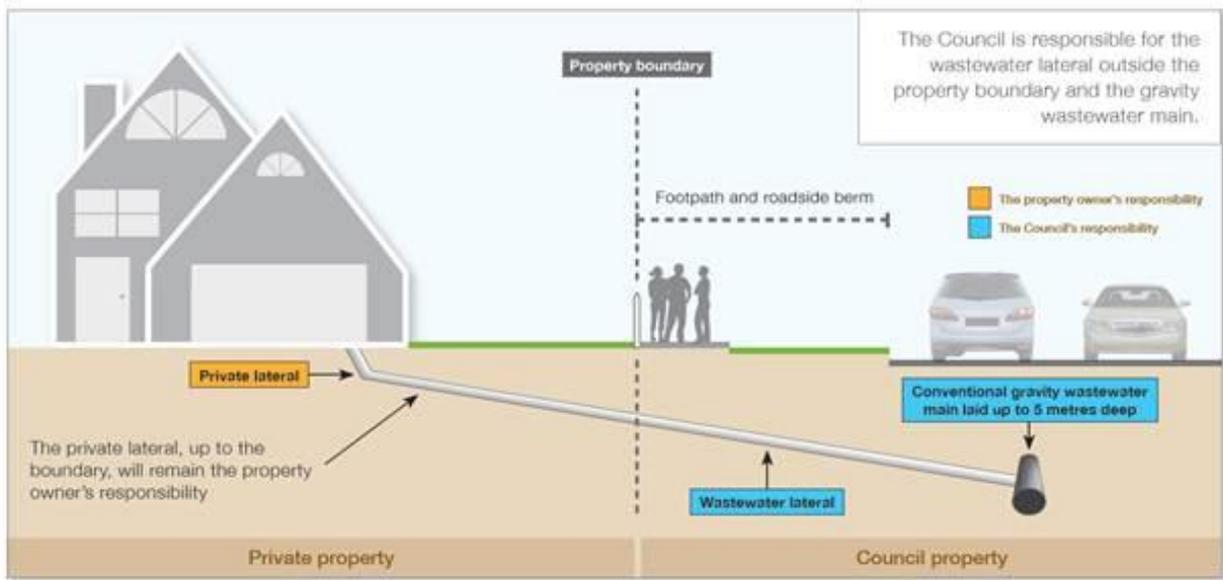


Wastewater will arrive at the Shirley catchment's new pumping station, on Golf Links Road, from small collection chambers, usually located on the grass berm of a street, each serving up to four properties. The only visible parts in most streets will be collection chamber lids and man-holes at ground-level, while vent stacks will sit against property boundaries. Like in other parts of the city, wastewater from the new pumping station will go via the normal gravity system southeast to the wastewater treatment plant at Bromley.

### **Residents will not notice any change**

Shirley residents will not notice any difference when they flush their toilets or see their kitchen and bathroom wastewater draining to the collection chamber on the street via the gully trap/ lateral pipe. There is no additional cost to them for becoming part of this modern system.

## A gravity sewer lay out



## A Vacuum sewer lay out

