

Leith Flood Protection Scheme

The Otago Regional Council established the Leith Flood Protection Scheme to improve the flood protection capability of the Water of Leith.

The Water of Leith

Most of the time, the Leith is a quiet stream that drains the northern hills and flows out to sea through the Dunedin CBD. However, by nature of its very steep catchment, heavy rain can turn the waterway into a roaring river with little warning. These floodwaters can quickly inundate the lower reaches, posing a flood risk to the city and its inhabitants.

The Leith is also home to a variety of freshwater fish species, notably native eels, brown and rainbow trout and spawning chinook salmon.

History

The Leith's potential to cause serious and costly damage has led to a variety of protection works over the years. However, it was evident from multiple historic floods that the existing infrastructure was insufficient to protect the city from a serious flooding event.

In 1929, the river overtopped its banks with the largest flood on record. This flooding event, and subsequent floods, caused major damage and disruption to the city and its infrastructure; bridges were swept away, and streets and houses were flooded.

The Leith Flood Protection Scheme is a multi-staged project that has spanned well over a decade. It is predominantly funded by targeted Leith scheme rates.



Flooding in Harrow St, 1929 (DCC Archives)



Historic flooding outside the university clocktower in 1923 (DCC Archives)

It involves a series of engineering modifications along the length of the Leith, planned to control floodwaters and help reduce the likelihood of it overflowing and spreading throughout the city.

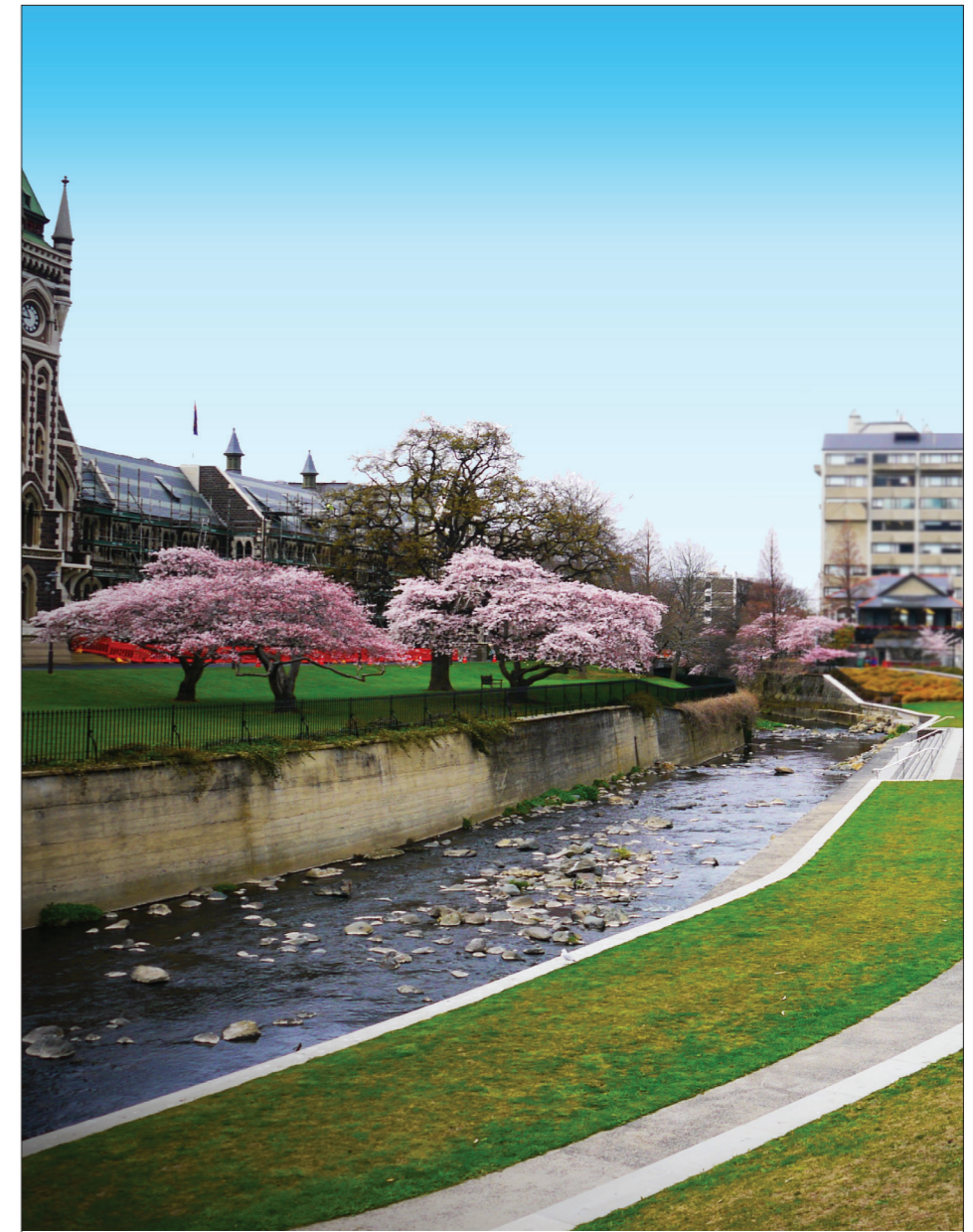
Specifically, the improvements are designed for the lower reaches to cope with a 1-in-100-year flood. This major flood event has an estimated flow rate of 171 cumecs (cubic metres per second).

Improvement works at certain reaches along the Leith have been determined by engineers through hydraulic and computer modelling. These include channel widening, wall heightening or lowering, streambed grading and landscaping.

The Benefits

Although primarily an engineering project aimed at increasing flood protection, the scheme has improved public access to the river and restored its natural environment. The beautification of the river has led to increased public engagement and connectivity with the river.

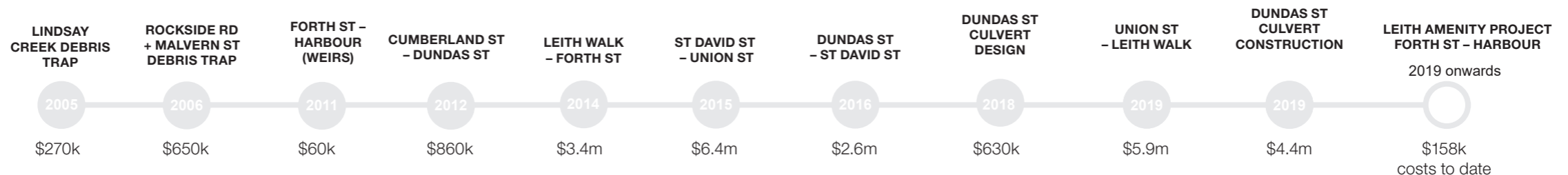
This is particularly evident on the University of Otago campus. Completed in 2015, the St David St – Union St channel running next to the iconic clocktower has become an open and inviting focal point for students and the public to engage with the river.



St David St – Union St work opposite the university clocktower in 2016 (ORC file)

Project timeline and costs:

Construction began in 2005 and is scheduled to be completed in 2020. Projects with unfilled circles on the timeline are either currently under way or due to begin in the future.



Other costs:

Leith scheme management 301k | Project design and management \$2.7m | Operations + maintenance \$2.8m | One-off costs (i.e. flood events, appeals, funding assessments) \$760k | Union St - Forth St design \$1.1m | Lower Leith investigations \$220k

Total provisional cost at June 2018:

\$29.6m
(excluding forecast)



www.orc.govt.nz/leithfloodprotectionscheme