

TO THE RESIDENTS OF SOUTH DUNEDIN

Dear resident,



It has been a year since the June 2015 flooding which affected several parts of the city, but particularly South Dunedin. Many residents suffered major loss and upheaval.

Since then, the Council has made a significant effort to understand the causes of the flooding and look at what can be done to reduce the impact of similar occurrences in the future. We have also been studying longer-term challenges affecting South Dunedin and other parts of the city.

This letter is to inform you about a number of things. First, to explain what caused the flooding in South Dunedin last year and the steps we have taken to ensure that the South Dunedin stormwater system is now working as well as it possibly can. Secondly, we'll explain what we've found out so far about how conditions are changing in the South Dunedin area and the future challenges that presents for our city.

What caused the flooding in South Dunedin and what has been done to improve things so far?

In short, more rain fell than the stormwater system could possibly cope with.

Some of Council's infrastructure wasn't working as well as it should have. Specifically the Portobello Pumping Station screens blocked which meant the pumps worked below capacity. This made the flooding worse. In addition, and to a lesser extent, mudtanks were blocked.

However, the rainfall in June 2015 was among the heaviest at Musselburgh since records began in 1919. Not only was there more rain falling in South Dunedin than the system could cope with, there was also water flowing into South Dunedin from the surrounding hills and the ground was already very wet, meaning it couldn't soak up much additional water. With that amount of water, significant flooding was inevitable even if the system had been running perfectly.

Since then, the Council has committed some \$650,000 to address identified issues with the system:

- all of South Dunedin's mud tanks have now been thoroughly cleaned
- a new screen, that is easier to clean in high flows, will be installed at the Portobello Pumping Station in July and commissioned during August
- additional alarms will be installed to give earlier warning if pump screens are becoming blocked.

This will mean the existing South Dunedin stormwater system will work as well as it possibly can.

What do we know about the South Dunedin stormwater system and the changing conditions that are affecting it?

The South Dunedin stormwater system was installed in the 1960s and a range of factors have changed since then. The public expectation of the city's infrastructure has also increased.

- **More hard surfaces in the area:**

In 1968, 45.7% of the area of South Dunedin was surfaced in a way that meant rain couldn't soak into the ground. Now it's 60%, so the stormwater system has to cope with much more run-off now. Development of private infrastructure such as more hard surfaced driveways, carports and garages has also contributed.

- **Water running in from other catchments:**

South Dunedin is part of a large natural catchment. This is divided up into blocks that drain stormwater independently from each other in small scale rain events. However, in larger events, rainwater from other catchments – especially those on nearby hills – runs down into South Dunedin making the flooding there even worse.

- **High groundwater:**

The ground acts as a sponge soaking up rainwater until it is saturated. The ability of the ground to absorb water is partly determined by the level of groundwater. Groundwater is the water found underground in the cracks and spaces in soil, sand and rock. South Dunedin has always had high levels of groundwater, which reduces the ability for rainwater to soak into the ground. The Parliamentary Commissioner for the Environment's report into sea level rise released late last year predicts that rising sea levels will continue to push up the groundwater levels in South Dunedin. This means, over time, the ground will be able to absorb even less rainwater.

- **More heavy rainfall events:**

Scientific and central government advice tells us to expect more frequent and severe weather events in the future as a result of climate change. This means we can expect to get more severe rain events that our stormwater system cannot cope with, even when we have it working as well as it can.

All of these factors mean that even if we ensure the current stormwater system is working as designed, there will still be a risk of flooding and that risk will increase over time as a result of the effects of climate change.

How is Council planning for this?

We are focusing on improving the longer term situation in South Dunedin and other low-lying areas of the city. The Council's concern is the wellbeing of residents and the maintenance of all of our assets. We are looking at identifying all of the options, their costs and benefits.

There is funding in this year's budget for:

- **South Dunedin research** – this work will inform our response to the risks posed by groundwater and sea level rise. This includes working closely with the Otago Regional Council – which is collecting groundwater and sea level data – to look at options and supporting the community to work with us to assess these.
- **Coastal erosion research** – further investigation for medium-term protection options for Ocean Beach and initial analysis identifying other parts of the Dunedin coastline at risk from erosion. Both these pieces of work will be done in consultation with the community and Otago Regional Council, with input from the Ministry for the Environment.
- **Maintaining and optimising existing infrastructure** – The Council's current priority is to ensure stormwater services are maintained as well as possible. No money is currently budgeted to upgrade the capacity of the South Dunedin stormwater system. Any significant upgrades would potentially cost tens of millions of dollars. However, the Council is investigating all possible ways of optimising the systems we already have. Some of that work is being assisted by experience and expertise within our community.

What are the next steps?

In South Dunedin we are currently addressing the short-term issues with the current stormwater infrastructure, so the system works as well as it can. We are also looking at medium-term options to reduce the risk of flooding due to rising groundwater and more severe rainfall events. In the longer term, we will need to consider the resources required to build greater resilience in South Dunedin and across the whole of the city.

We know we must plan for climate change, particularly sea level rise. But it is more important to do that well than to rush and get it wrong.

Addressing the issues of the future requires us having a two way conversation with you, as members of the community, about options, expectations, what can technically be achieved, and affordability.

This is the start of that process. The DCC will be actively seeking your thoughts on these issues and what the long-term responses might be. We are looking into a range of options to make this easy for the community, including a drop-in centre, where people can come in and ask questions. We'll be publicising these through the newspaper and other media channels once we have them up and running. You can also check for updates at www.dunedin.govt.nz/southdunedin

As conditions and challenges change, particularly in South Dunedin, our responses and the way we communicate with the community will also need to change. The Council is collaborating with other groups and agencies in the community to develop more effective communication channels.

In the meantime if you have any issues to report with DCC infrastructure or other council related matters please phone 03 477 4000 and talk to our friendly staff or email us at dcc@dcc.govt.nz or visit us on Facebook www.facebook.com/DunedinCityCouncil or Twitter www.twitter.com/DnCityCouncil

Yours sincerely,



Dave Cull
Mayor of Dunedin