

What's this all about?

Planning for sea level rise in Dunedin's Harbourside and South City

Last year the DCC commissioned consultants, Beca, to identify and assess potential options for protecting the Harbourside and South City from sea level rise. The resulting high-level 'Protection Options Report' indicates that there are likely to be options for protecting the area from sea level rise, but that a significant amount of work will be needed before we can be certain or before any decisions can be made. The report is a useful starting point for future investigations.

What problems are expected in the area?

The main threat, at least in the medium term, is from rising groundwater in the South City area, as groundwater is forced up by rising sea levels. Direct inundation from the sea is expected to be more of an issue around the Otago Harbour in the long term.

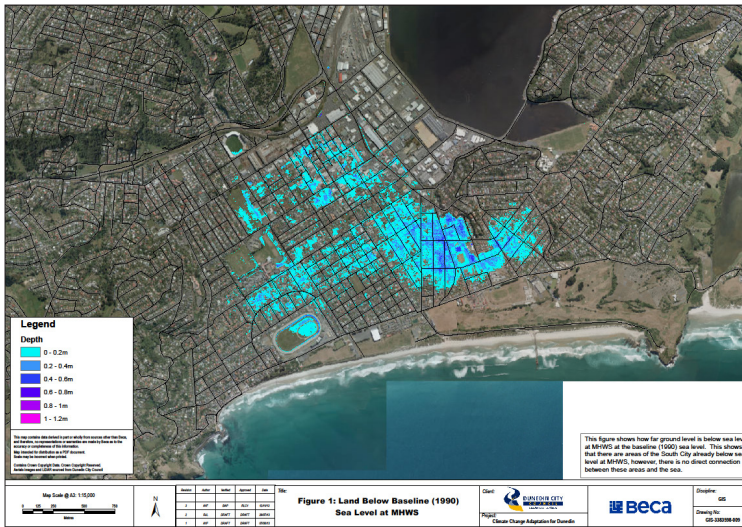
What are the options?

While at a high-level, the report indicates that there are potentially options for protecting the area from the direct impacts of sea level rise. It recommends incrementally installing engineered protection solutions as the sea level rises, specifically;

- Installing localised pumped drainage systems in low-lying areas of the South City by the time the mean sea level has risen 0.3m above 1990 levels. (Estimated rough order construction cost of \$10.3m.)
- By the time the mean sea level has risen 0.8m above 1990 levels: intercepting incoming water at the coastal and harbour perimeters of the South Dunedin aquifer before it reaches the aquifer and forces its level up; pumping stormwater from low lying parts of the Harbourside; and, protecting against inundation along the harbour perimeter. (Estimated rough order construction cost of \$65.1m.)
- Progressively augmenting the system as sea level continues to rise – at a continually increasing cost.
- It is important to note that the report is based on existing knowledge of the South Dunedin aquifer. The report's key recommendation is that we need to increase our understanding of the aquifer's nature and behaviour before we can be certain that protection options are viable and before the community and the DCC can make any decisions on protecting the area.



Harbourside & South City



Land below baseline (1990) sea level at MHWS

Why Harbourside and South City?

The Harbourside and South City is the area of Dunedin most vulnerable to sea level rise. It is the most developed and populated part of our city and significant city-wide infrastructure is located there. Some parts are already below sea level at Mean High Water Springs (see figure to the left), however, higher land around the perimeter (sand dunes along the coast and higher ground along the harbour edge) currently prevent direct connection between these areas and the sea. Many residents in the area will be aware of groundwater issues that already exist.

When are these sea levels expected to eventuate?

The Beca report models the effects of sea level rise based on the DCC's Climate Change Predictions Policy which predicts a 0.3m rise above 1990 levels by 2040 and a minimum rise of 0.8m above 1990 levels by 2090.

The report is based on specific sea levels rather than being directly linked to timeframes. This means it will remain relevant when predictions around timing are updated as scientific knowledge and understanding of climate change is refined. The DCC will review the predictions policy once the Ministry for the Environment updates its guidance for local authorities.

Where to from here?

A significant amount of work is required before the DCC, in conjunction with the community, will be in a position to make decisions on whether to invest in protection measures and, if so, what measures should be undertaken and who should pay for them. These decisions are unlikely to be required in the short to medium-term.

Over the next year the DCC will explore non-protection options and will develop methods for evaluating different responses. Community engagement on the known issues and information is also planned.

Resourcing for future climate change adaptation work will be considered by the DCC as part of the Long Term Plan 2015/16. The DCC is committed to working collaboratively with the Otago Regional Council, including to improve our understanding of the South Dunedin aquifer, and to engaging the community throughout the process.

Does this change what I can do on my property?

Will the findings mean I can't subdivide, build a new garage, add on to my house etc?

No, the existence of this report does not change what you can and can't do on your property. However, the report shows that decisions will have to be made in the future about how to manage the effects of sea level rise, and those decisions may include some changes to the rules regarding the development of potentially affected properties.

The DCC is currently developing a second generation District Plan (2GP) to manage what people can do on their land and how it can be developed. The draft 2GP preferred option for the Harbourside and South City area is to continue providing for industrial and commercial uses in the Industry and Commercial - Centre Zones in line with the approach taken for similar zones elsewhere in Dunedin within the 2GP.

With regard to residential development, the 2GP approach to the Harbourside and South City is to limit development to existing levels. This means that no medium density housing or family flats will be permitted in the South Dunedin Residential Zone. The minimum site size will remain the same as in the current District Plan - at 300m², or 500m² in the areas around St Clair. As new information becomes available, and the DCC, with the community, make decisions about what interventions to implement, the District Plan approach to the area may need to be reviewed.

Where can I find out more?
www.dunedin.govt.nz/climatechange