

# Effect of Sea Level Rise for Christchurch City

## Frequently Asked Questions

### 1. *What flood prevention measures for flood prone areas, is the Council taking in advance of the expected sea level rise in Christchurch?*

The Council provides and maintains the stormwater drainage system (surface water management systems, for example; streams, rivers, utility waterways, basins, pumps, structures, pipes, etc). Flood protection works include maintaining the natural waterways and associated structures and systems, such as stop banks and flood gates.

The Council has been planning for sea level rise for some years. Variation 48 introduced the Flood Management Areas (FMA) to the District Plan identifying low lying areas around the coast and the Styx, Avon and Heathcote Rivers. Modelling of tidal flooding in the FMAs includes an allowance for 0.5 metre sea level rise. The FMAs protect ponding areas and set higher floor levels for new buildings.

### 2. *When can I expect to see the effects of the sea level rise?*

The sea level has been rising slowly over the last century at an average rate of 1.7 millimetres per year – that is an increase of 17 centimetres over the last 100 years. The rate of rise has been increasing with an average increase of 3 millimetres per year over the last 15 years.

### 3. *How much will the sea level rise by in the next 100 years?*

The latest science suggests a reasonable projection for planning purposes is a 1 metre sea level rise over the next 100 years, with a plausible upper level of two metres. The uncertainty with the upper level of sea level rise is related to the different projections for the rate of melting of the Antarctic and Greenland ice sheets.

### 4. *I don't live right by the coast, how will this affect me?*

The effects of sea level rise can be felt inland in low lying areas such as Christchurch. Low lying properties close to the Styx, Avon or Heathcote rivers, where the water level is influenced by the tides, may be affected. The broad extent of the Flood Management Areas in the lower reaches of our urban rivers reflects the impact of tidal inundation and flooding.

### 5. *Do I need to protect my property?*

The impacts of sea level rise will be gradual and there is time to adapt. If you are within a FMA any new building will have to be at the minimum floor levels. You can find out about floor levels for your property at [www.ccc.govt.nz/floorlevels](http://www.ccc.govt.nz/floorlevels)

### 6. *Will the Council assist me with protecting my property?*

The Council provides and maintains the stormwater drainage system and flood protection works in many parts of the city. As part of its land drainage recovery plan various options are being investigated for flood protection and risk mitigation in areas prone to extreme flooding following sea level rise. These options will be further researched and considered over the next few years.

It is important to remember that the City's Flood Management Areas are designed for protection in an extreme 0.5% AEP (200 year) event and, in tidal areas, on the effects of the predicted sea level rise in the year 2100. That means that the risk for many homes is not an immediate one – it will gradually become a risk in 90 years and the Council is planning now to deal with future issues. Should a higher level of predicted sea level rise be adopted then this matter will be reviewed.

**7. How will this affect the services to my property, i.e. power, waste water etc?**

There will be no change to the provision of services in the short-term. The location of infrastructure and the provision of services to flood-prone areas over the longer term will be considered as part of a broader climate change and natural hazards strategy.

**8. Is there an official report in to the expected sea level rise?**

Yes. In November 2013, environmental engineers Tonkin & Taylor delivered a report to Council on the effects of sea level rise for Christchurch City and Banks Peninsula.

**9. Where can I see this report?**

For a copy of the Tonkin and Taylor 'Effects of Sea Level Rise for Christchurch City' report please go to the website below.

<http://resources.ccc.govt.nz/files/TheCouncil/policiesreportsstrategies/strategies/healthyenvironmentstrategies/climate/mart/EffectsOfSeaLevelRiseForChristchurchCity.pdf>

You can also find it by inserting 'Tonkin & Taylor sea level rise' into the search box.