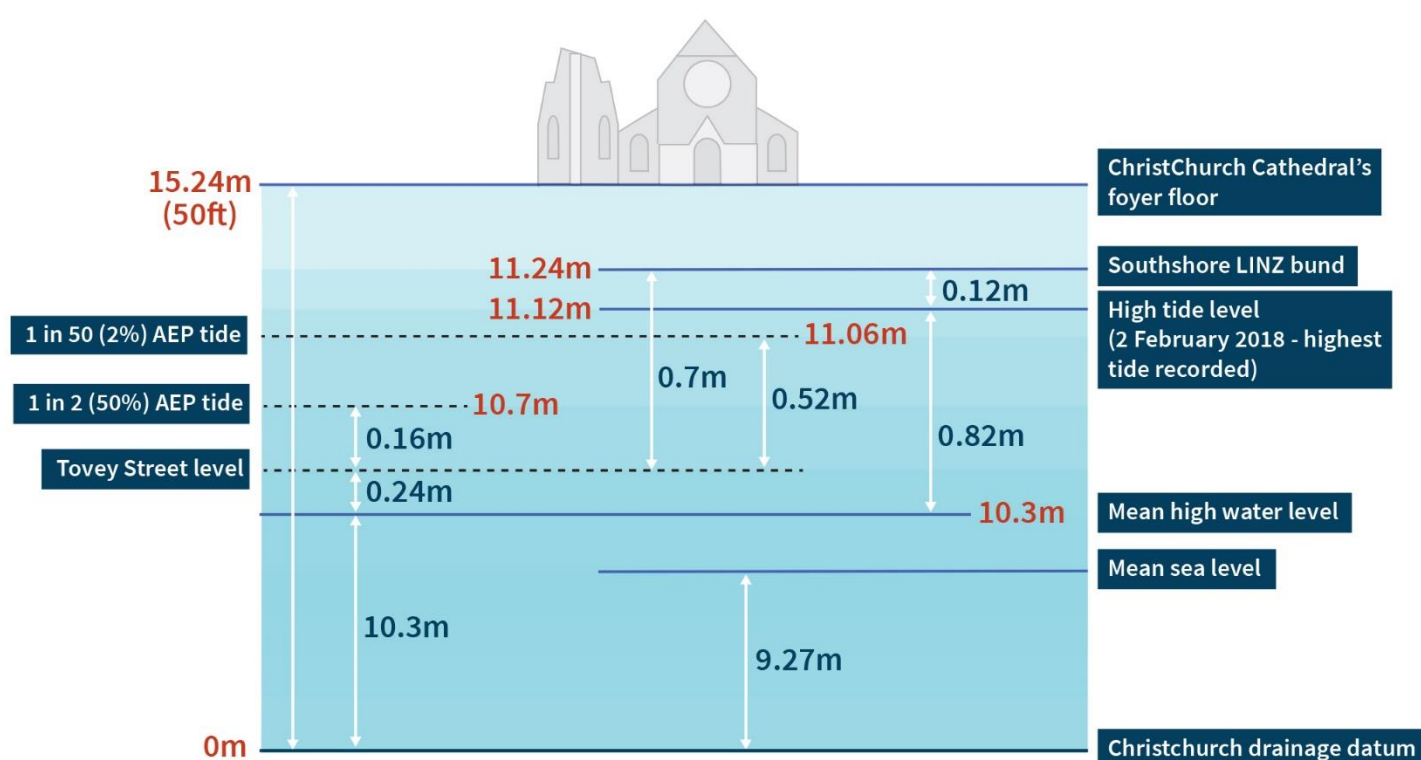




SOUTH NEW BRIGHTON AND SOUTHSHORE FACT SHEET

DATUM AND LEVELS

This Fact Sheet is about the Christchurch Drainage Datum, and how we use it and other levels in our understanding of flood risk. It has been produced to provide supporting information for the Southshore and South New Brighton Earthquake Legacy Project.



The Christchurch Drainage Datum

The Christchurch Drainage Datum (CDD) is an agreed baseline that is used to help manage Christchurch's drainage issues by describing levels. It dates back to 1876, when it was agreed that a common level for engineering works was needed. The datum is the reference point from which all other levels in the city are measured. This point is set at 50 feet (15.24m) below the floor level of the ChristChurch Cathedral. This means that the datum is always positive (above 0), even when working in places such as New Brighton and Sumner where infrastructure is often situated below sea level. In fact sea level is not even factored into the measurement – it's all about the height of the structure relative to a point 50 feet (15.24m) below the Cathedral floor.





The Christchurch Cathedral floor is at 15.24m. By comparison, the top of the Land Information New Zealand (LINZ) bund in Southshore is 11.24m – neither structure is below sea level.

You often see the letters RL put before the datum level – RL stands for Reduced Level and is a standard term for survey points with reference to a common datum.

Mean High Water Level

Mean High Water Level (MHWL) is used to describe the boundary between land and sea. It is an important planning boundary and separates areas of responsibility between the Christchurch City Council and Environment Canterbury. Environment Canterbury has legislative responsibilities seaward of MHWL and Christchurch City Council, landward.

Mean Sea Level

Mean sea level is the average height of the surface of the sea over a long period of time or the average level which would exist in the absence of tides.

Highest Astronomical Tide

The Highest Astronomical Tide (HAT) is the highest tide level which can be predicted to occur under average meteorological conditions over 18 years. Recent Christchurch City Council research shows that the HAT is likely to be up to about 0.9m above Mean High Water Level.

Annual Exceedance Probability

Annual exceedance probability (AEP) is the probability of a flood occurring in any one year. The probability is expressed as a percentage. For example, a flood which may be calculated to have a 1% chance (a 1 in 100) of occurring in any one year is described as 1% AEP. For more information about the size and chance of floods, see our fact sheet: What is a 1 in 100 year flood?



Southshore and South New Brighton fact sheets

The Southshore and South New Brighton Fact Sheet series cover a range of issues:

Fact Sheet title	What it covers
Flooding	Why the Canterbury earthquakes have led to increased flooding risk in Southshore and South New Brighton.
Groundwater	What groundwater is and why it causes issues in Southshore and South New Brighton.
Stormwater	What stormwater is and why it causes issues in Southshore and South New Brighton.
Planning and approvals	How the planning and approvals process can impact the timing, cost and requirements for options in this area.
Christchurch drainage datum and levels	What the Christchurch drainage datum is, and how we use it and other levels in our planning.
2018 new high tide statistics	Information on the record high tides experienced in Christchurch coastal areas and the 2018 review and update of tidal statistics which has occurred following these events.
Stopbanks, bunds and other structures	Explanations of some of the different structures that can be used for flood and erosion mitigation.
What is a 1 in 100 year flood?	How we describe the probabilities of floods.