

Flood Ready



Adelaide
Plains
Council

WEBB BEACH COMMUNITY EMERGENCY MANAGEMENT PLAN

Prepare to deal with floods in Webb Beach



Summary
January 2023

Sea flood impacting Webb Beach 24 June 2021

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If a very high tide is combined with a severe storm, Webb Beach's low elevation means roads and properties are at risk of flooding.

What is the Webb Beach Community Emergency Management Plan?

The Webb Beach Community Emergency Management Plan (CEMP) assesses the risk of flooding from the sea at Webb Beach. The CEMP was prepared in 2022.

Why do we need a CEMP for Webb Beach?

You and your neighbours need up to date information on the risk of flooding from the sea so you can take action to be prepared.

How was the CEMP prepared?

Council engaged coastal consultants, Integrated Coasts, to prepare the CEMP. This involved reviewing past investigations and liaison with the Coast Protection Branch, Department of Environment and Water.

What do we know about the risk of sea floods at Webb Beach?

Webb Beach's low elevation means it is at risk of being flooded by the sea. Sea-floods are caused by a combination of high tides and storm events. Floodwaters rise and fall with the tides and last for 1 to 3 hours.

Table 1: What could a sea flood look like in Adelaide Plains?

Flood Characteristic	Adelaide Plains region
Velocity of water	Low, due to tidal action and ocean terrain
Direction of flow	From the west
Duration of flood	Short 1 – 2 hours
Warning	Predictable as flood normally relate to tide

The two main scenarios in which meteorological conditions can combine with a high tide which may cause flooding at Webb Beach are:

- High Tide combined with a Southern Ocean Low
- High Tide combined with Strong Onshore Winds

These are more likely to occur between April and September.

COASTAL FLOOD RISKS AT WEBB BEACH ARE **PROJECTED TO INCREASE** IN FREQUENCY AND EXTENT AS THE CLIMATE CHANGES AND SEA LEVELS RISE.

Scenario 1:

High Tide combined with a Southern Ocean Low

This scenario is where tidal conditions produce the largest storm surges in Gulf St Vincent in association with a deep depression (low) in the Southern Ocean.

With a falling barometer and the onset of northerly winds, the tides are below prediction, but as the wind backs to the north-west an increase in level occurs (waters in the Gulf are backed up against Kangaroo Island).

If the strong north-westerly wind switches to the west-south-west at about the time of low water, then a storm surge of maximum amplitude will occur with heights expected from 1m to 1.5m above the predicted tide. The narrowing of the upper Gulf causes the large volume of water to be pushed up against the coast and therefore water levels are higher at Webb Beach than at Outer Harbor.

These high levels will continue until the barometer starts to rise, and the wind moves rapidly to the south east within 12 hours, and with a rapidly rising barometer, the tides return to normal at about that time¹.

The risk of coastal flooding at Webb Beach is related to the peak of the tide height and as the tide falls, the risk reduces.

Figure 1: Storm Scenario 1 – High Tide combined with a Low in the Southern Ocean



¹ Flinders Ports (ND) Port User Guide – General Information, and Lord 2012, p 22.

Scenario 2:

High Tide combined with Strong Onshore Winds

The scenario of a high tide combined with strong onshore winds push water up against the coastline and increase the height of waves. However, due to the shallow water and the small distances that the wind can travel over water in the Webb Beach region (30-50kms), this storm scenario is not likely to produce waters high enough to flood Webb Beach, although erosion of the foreshore may occur.

Figure 2: Storm Scenario 2 – High Tide combined with Strong Onshore Winds



How might Webb Beach's properties and roads be flooded?

A major sea flood will impact properties and roads in Webb Beach. The impact of a “1 in 100 storm Event” has been modelled in the CEMP. A 1 in 100 Storm is approximately 0.2m higher than the 2016 flood.

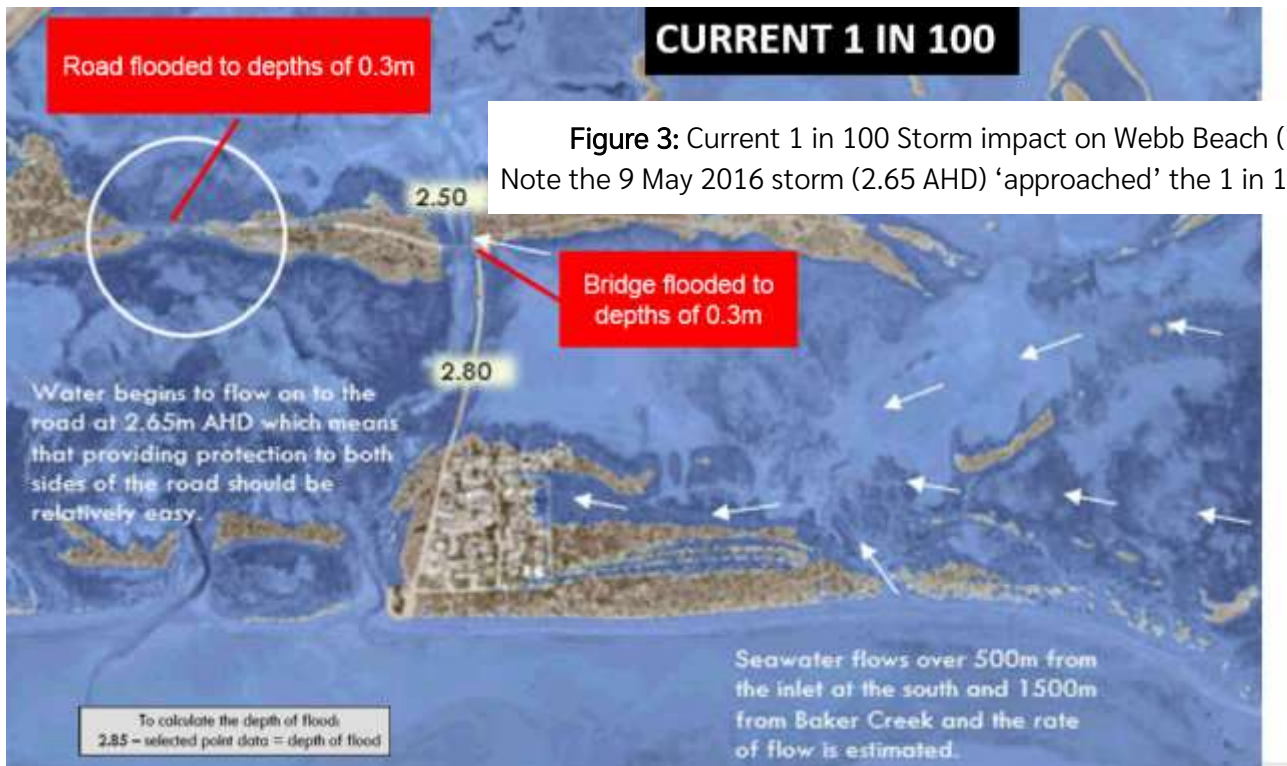
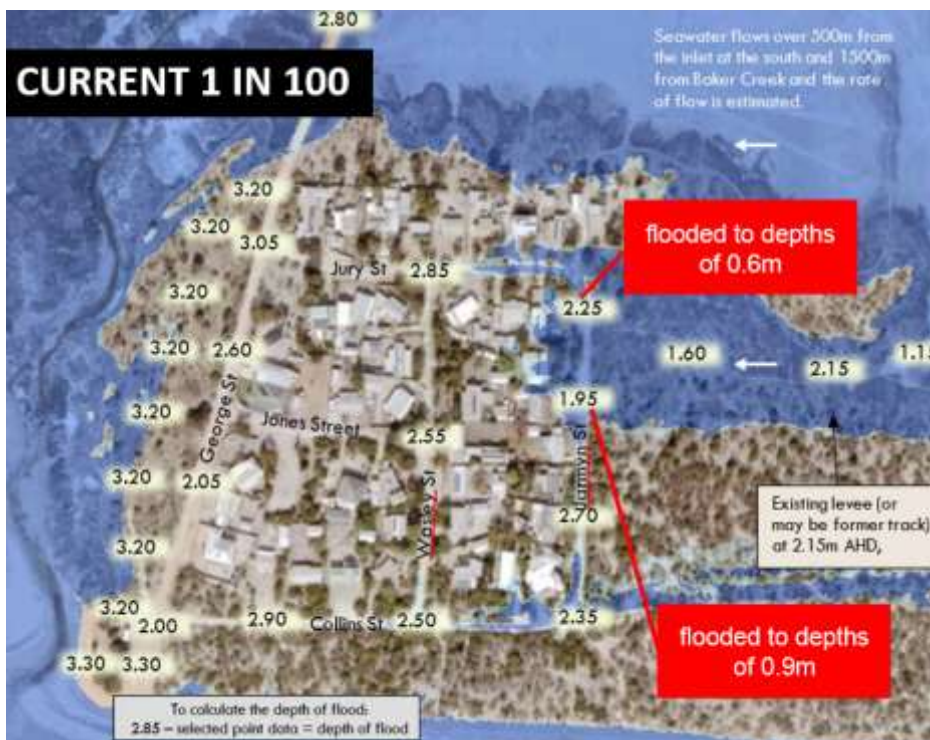
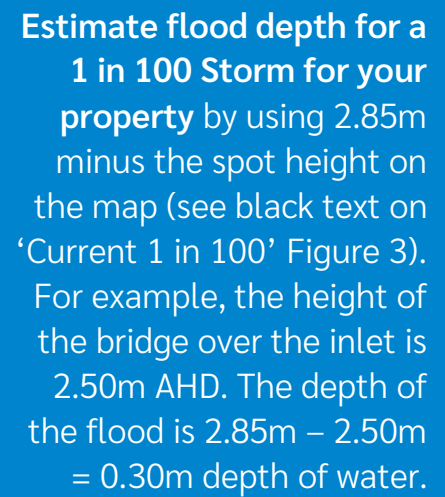


Figure 3: Current 1 in 100 Storm impact on Webb Beach (2.85AHD). Note the 9 May 2016 storm (2.65 AHD) ‘approached’ the 1 in 100 Storm.



Images prepared by Adelaide Plains Council staff based on the Webb Beach CEMP.



Estimate flood depth for a 1 in 100 Storm for your property by using 2.85m minus the spot height on the map (see black text on 'Current 1 in 100' Figure 3). For example, the height of the bridge over the inlet is 2.50m AHD. The depth of the flood is $2.85\text{m} - 2.50\text{m} = 0.30\text{m}$ depth of water.

What could a 1 in 100 Storm look like?

If the 1 in 100 Storm (rare event) occurred as projected by SA Coast Protection Board then:

- Some sections of Webb Beach Road on the section from Port Parham Road to the inlet bridge would be flooded up to depths of 0.3m.
- Seawater would flow over the bridge on the corner of Webb Beach Road and George Street at a depth of 0.3m.
- Seawater would flow through the inlet south of Webb Beach and if the duration of the event was long enough, flow into Jarmyn Street. This event may inundate areas in the Jarmyn Street vicinity by 0.50m to 0.80m of seawater on the road, and impact some of the base of homes.
- The flood pattern shown coming from the south to the corner of Jarmyn and Collins Street is unlikely to penetrate into this area within one flood cycle.

How can I be warned of a sea flood?

Advice and Warnings will be issued by the Bureau of Meteorology (the Bureau) and State Emergency Services (SES).

The Bureau will issue storm tide **advice** when predictions are above 3.50m (tide datum) at Outer Harbor or a **warning** when predictions are above 3.75m (tide datum). Advice and Warnings may not specifically mention Webb Beach, however, **advice and warnings** for coastal areas of Gulf St Vincent are relevant to Webb Beach.

The SES may issue a flood advice or warning if an extreme weather event is likely to lead to flooding that may have a significant impact on life or property, including cutting evacuation routes or inundating property. Advice or warnings issued for areas described as the Mallala coastal communities, Adelaide Plains coastal communities or Gulf St Vincent coastal communities will be relevant to Webb Beach. It is unlikely that public warnings will specifically mention Webb Beach.

Sea flood advice and warnings issued for Gulf St Vincent, Adelaide Plains, or Mallala Coastal Communities can affect Webb Beach.

What do I need to do?

Prevent and Prepare before a flood happens	Respond when a storm tide or flood warning is issued	Recover after flood waters recede
<ol style="list-style-type: none"> 1. Find out about Webb Beach flood history and flood risks from the Community Emergency Management Plan on Council's website 2. Learn about the flood warning system 3. Keep an eye and ear on the weather 4. Check your house and property are 'flood ready' 5. Prepare your household emergency plan. A template is on Council's website 	<ol style="list-style-type: none"> 1. Know who to call 2. Secure your property and valuables 3. Decide to stay or go 4. Take care moving around 5. Check on your neighbours 6. Stay tuned to local media 7. Follow the advice of emergency services 	<ol style="list-style-type: none"> 1. Take precautions 2. Check electricity and services 3. Inspect your home and property 4. Check on your neighbours 5. Clean up inside 6. Clean up outside

The Webb Beach Community Emergency Management Plan and a template Household Emergency Management Plan is available:

- From apc.sa.gov.au. Go to 'Council Services' and then 'Emergency Management'
- In hard copy from Council via email info@apc.sa.gov.au, phone 8527 0200 or the Mallala Office or Two Wells Service Centre
- For inspection at the Port Parham Sports and Social Club.