Flood Ready

Adelaide Plains Council

PARHAM COMMUNITY EMERGENCY MANAGEMENT PLAN

Prepare to deal with floods in Parham

Sea flood impacting Parham 9 May 2016

Summary
January 2023

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

What is the Parham Community Emergency Management Plan?

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

Why do we need a CEMP for Parham?

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 Parham?

Parham'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 floods normally relate to tide

The two main scenarios in which meteorological conditions can combine with a high tide which may cause flooding at Parham 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 PARHAM 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.

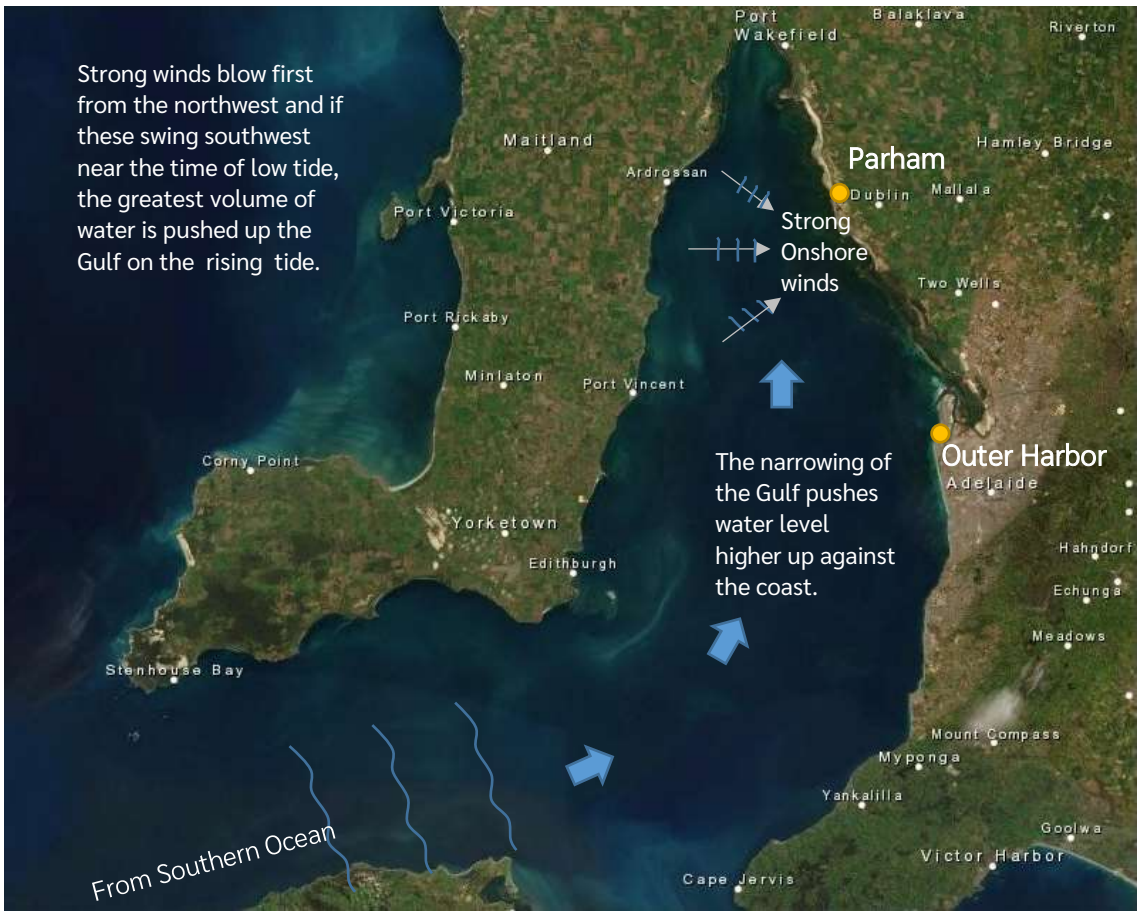
With a falling barometer and the onset of northerly winds, the tides are below prediction, but as the wind backs to the north-west an increase in level occurs (waters in the Gulf are backed up against Kangaroo Island).

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 Parham 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 time[1].

The risk of coastal flooding at Parham 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 Parham region (30-50kms), this storm scenario is not likely to produce waters high enough to flood Parham, although erosion of the foreshore may occur.

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

How might Parham's properties and roads be flooded?

A major sea flood on 9 May 2016 approached the type of flooding that may occur with what is called a "1 in 100 storm Event".

Seawater flowed into carparks and pooled against the dunes and vegetation.

In some carparks, water flowed along the coast behind the front embankment / dune.

Seawater flowed south of the levee on the southern end of Parham and flowed to Port Parham Road.

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Access ways to the beach were generally flooded at greater depth than surrounds (end of Second Ave).

Estimate flood depth for a 1 in 100 Storm for your property by understanding the depth of water in your location in Parham. (blue text on map)

What could a "1 in 100 Storm" look like?

A major sea flood will impact properties and roads in Parham.

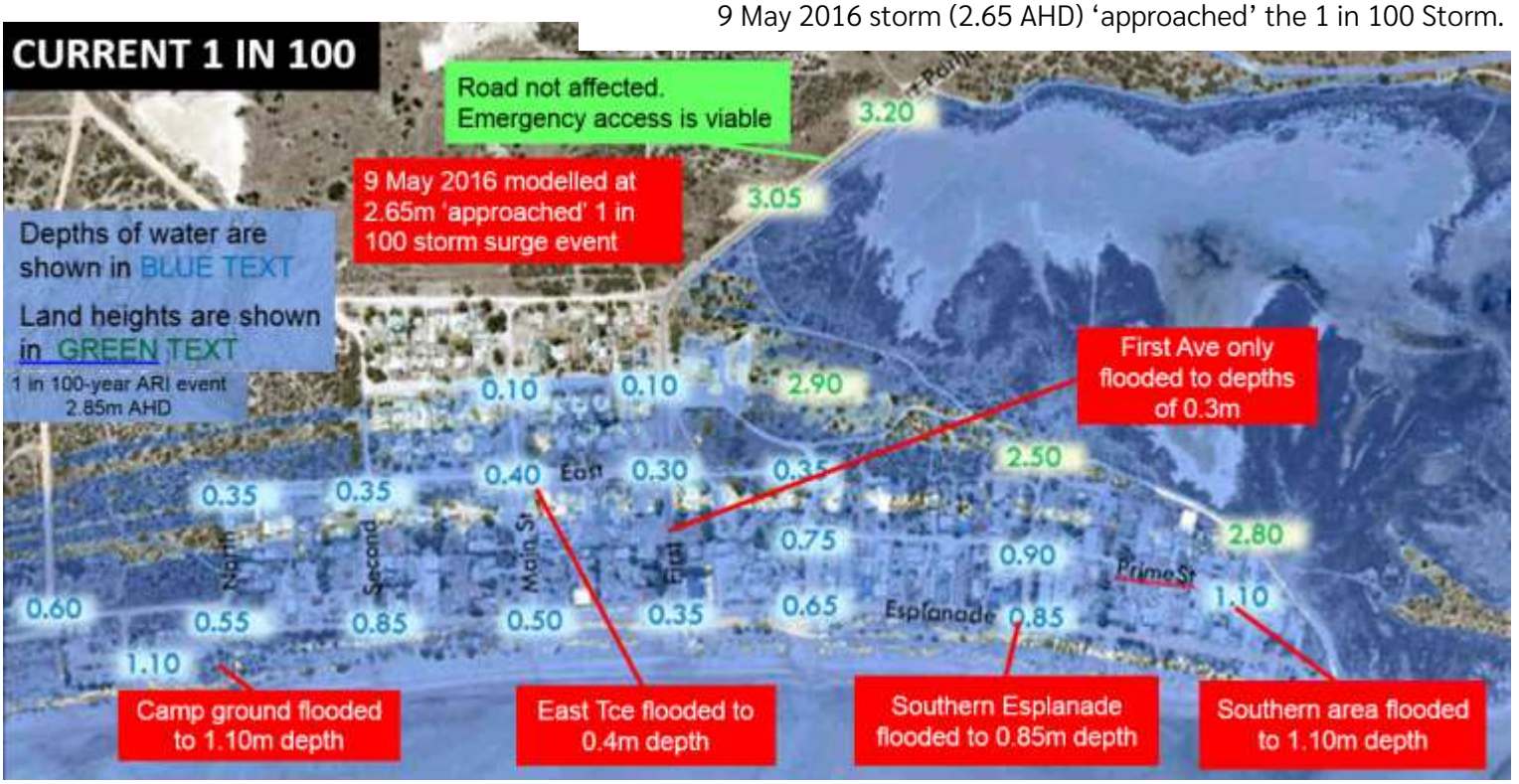
The impact of a 1 in 100 Storm has been modelled in the CEMP. A 1 in 100 Storm is approximately 0.2m higher than the 2016 flood.

A 1 in 100 storm means properties and roads in most of Parham are flooded. For example:

- First Avenue near The Esplanade and nearby properties are flooded by 0.3m or more
- Most of East Terrace is flooded to 0.3m or more
- The southern part of The Esplanade, Prime Street and nearby properties are flooded to 0.85m or more
- The Campground is flooded to 1.1m depth
- The Social Club may have flooding of 0.1m

In a 1 in 100 Storm event, Port Parham Road is not affected and emergency access is viable.

Figure 3: Current 1 in 100 Storm impact on Parham (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 Parham CEMP.

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

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 Parham, however, ***advice and warnings*** for coastal areas of Gulf St Vincent are relevant to Parham.

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 Parham. It is unlikely that public warnings will specifically mention Parham.

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
1. Find out about Parham 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	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	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 Parham 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.