

MAKING MIDDLE BEACH SAFR



A Community Emergency Management Plan
for Middle Beach



1 INTRODUCTION

WHAT IS THE COMMUNITY EMERGENCY MANAGEMENT PLAN (CEMP)?

The purpose of the Middle Beach Community Emergency Management Plan, or CEMP, is to provide the local community with information on the risks and hazards that may occur because of a storm surge on the settlement of Middle Beach.

The CEMP contains guidance for residents and landowners as to how they can best prepare for a flood and what the community can do before, during and after a flood to minimise property damage and the likelihood of injury or death.

The CEMP also provides information and guidance to residents and landowners on how to develop a Household Emergency Management Plan (HEMP) tailored to individual needs and individual property concerns.

WHY WAS THE CEMP DEVELOPED?

In 2013, the District Council of Mallala undertook the Coastal Settlements Adaptation Study to identify the impacts of sea flooding now and in the future and to devise realistic and economically viable responses and adaptation strategies to address the identified impacts.

The study concluded that there are no viable options to protect Middle Beach from storm surge flooding and recommended the District Council of Mallala assist the community to prepare for inherent flood events. This CEMP and guidance on the HEMP are outcomes of this recommendation.

WHO DEVELOPED THE CEMP?

The CEMP has been prepared through a collaboration between the local community of Middle Beach, Emergency Services, service and infrastructure providers, and the District Council of Mallala.



The Middle Beach settlement has suffered storm surge flooding that caused property damage and exposed people to harm. Storm surge flooding is likely to occur again.





The feedback, ideas and suggestions offered by workshop participants has guided the concept, design and content of the CEMP and the HEMP template.

HOW SHOULD THIS PLAN BE USED?

The focus of this CEMP is to assist the community adopt a 'floodsafe' approach to storm surge floods similar to those previously experienced, while recognising further sea-level rise may increase the level of hazards and risks to the community. The CEMP can be used when preparing and reviewing HEMPs as well as when speaking to other Middle Beach residents about their experiences, improvements they have made to their properties and actions they plan to take when the next storm surge flood occurs.

However, the CEMP is general in nature and may not cover all issues. Residents and property owners should make their own inquiries and seek professional advice when necessary, particularly when dealing with technical matters such as electrical systems or building improvements.

Hazards and risks are likely to vary between individuals (e.g. due to age, health, or mobility) and their properties (e.g. location, design, construction, and condition). Your HEMP needs to reflect you, others in your household, and your property. The best time to plan and prepare is now, before the next storm surge event. Your safety and the resilience of the community to cope and recover from a storm surge event rests with you and other members of the community.

Central to the CEMP is the wellbeing and safety of residents and others in the community. Leaving the settlement before a flood occurs should always be the first consideration if there is any doubt of possible harm to yourself, or others, in your household.

WHERE CAN I FIND OUT MORE?

District Council of Mallala
www.mallala.sa.gov.au

Coastal Settlements Adaptation Study–State of Play Report
<http://www.mallala.sa.gov.au/page.aspx?u=888>

SES www.ses.sa.gov.au

Bureau of Meteorology
www.bom.gov.au

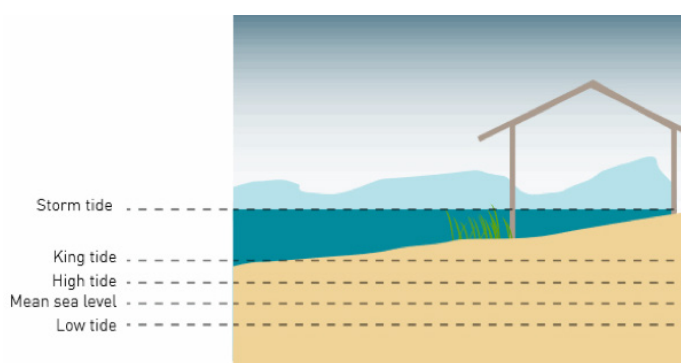
AlertSA
www.alert.sa.gov.au

Local ABC Radio www.abc.net.au

2 WHAT HAPPENS DURING A FLOOD EVENT IN MIDDLE BEACH?

STORM SURGE – WHAT IS IT?

A storm surge, also known as a storm tide, is a rise above normal water level along a shore resulting from strong onshore winds and/or reduced atmospheric pressure. When the storm surge arrives on top of a high tide, flooding can occur that reaches areas that otherwise have been safe. The storm surge can cause damage to property and threaten people's safety.



FLOODING IN MIDDLE BEACH

Storm surge floods may occur anytime during the year. However, they tend to occur in the cooler months (especially between April and September) on the higher afternoon tides (4 pm–8 pm). They occur in conjunction with north-westerly winds swinging around to a south-westerly.

Floodwaters up to 30 cm in depth have previously inundated approximately seven homes, causing damage to household effects and internal building materials. Many other properties had floodwater across their yards to varying depths.

The floodwaters rise and fall with the tides and in the past have lasted between 1 to 3 hours.

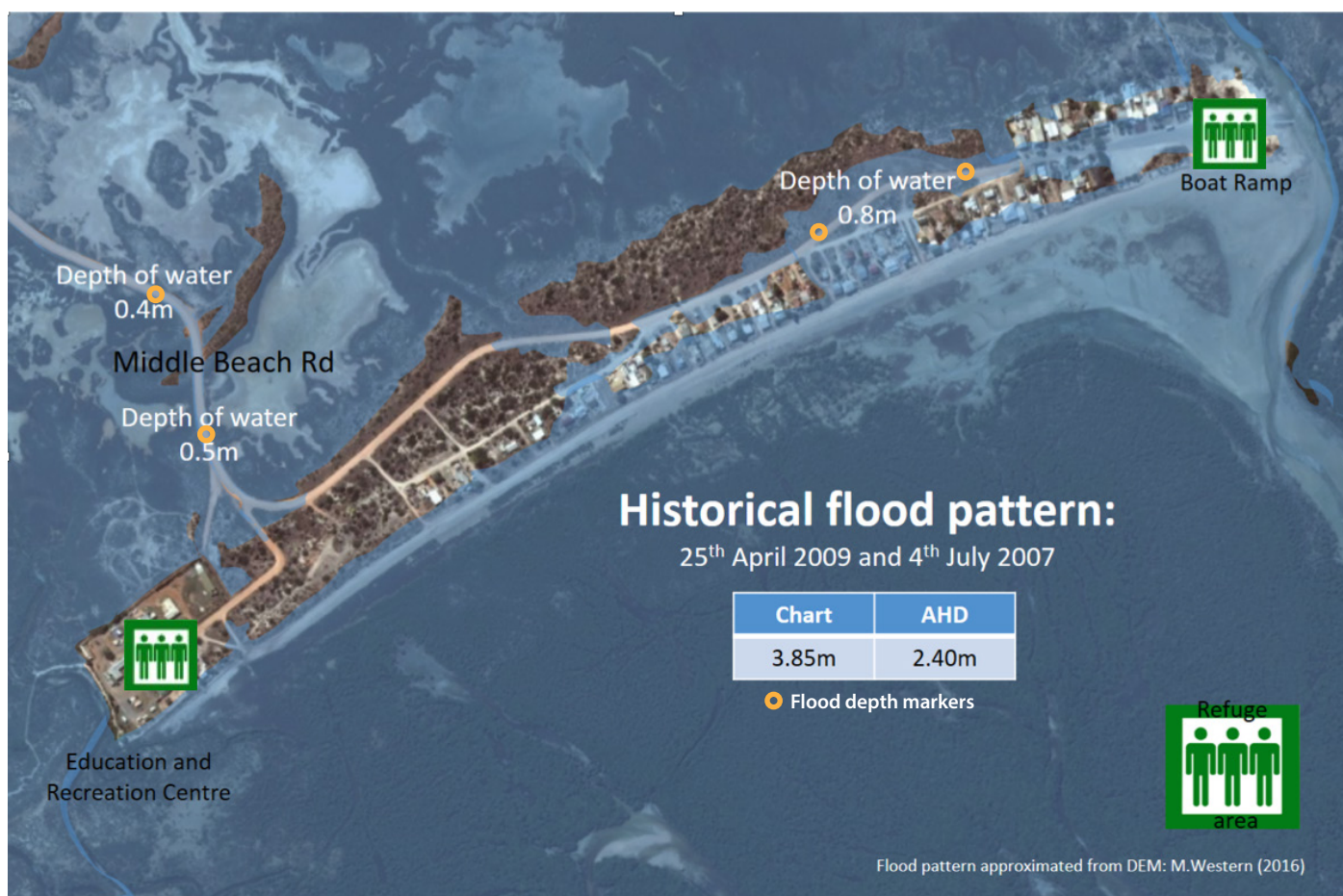
There is currently no remote system that can provide advance warning of a storm surge flood. Additional information about previous storm surge floods is available from DC Mallala.



HOW DO WE KNOW THIS WILL OCCUR?

A review of historical records and information from the Middle Beach community have highlighted that the settlement has experienced storm surge flooding on at least three occasions, resulting in significant inundation of the settlement. These occurred in July 2007, April 2009 and May 2011.

In addition to these flooding events, the community has described a number of times when seawater has risen abnormally. Records since 2007 show higher sea levels on at least 12 occasions (mainly between April and September). These events are possible warnings of the potential of further storm surge flooding.



Floodwaters can quickly cover the samphire flats behind the community and cover Middle Beach Road, preventing emergency service access. They can top over the shoreline and extend across the yards of some properties and flood sections of the Esplanade and Shorebird Road. The image provides an indication of extent of flooding in 2007 and 2009.

3 WHAT DOES BEING SAFR MEAN TO ME?

SAFR is a simple acronym that provides a prompt of actions to be taken during the four stages of storm surge flood: Secure, Alert, Flood, Recovery. These are actions that individuals and the community can take to protect property from damage and people from harm.



SECURE

Be aware of storm surge conditions

Storm surge floods may occur anytime during the year. However, they tend to occur in the cooler months (especially between April and September) on the higher afternoon tides (4pm-8pm). They occur in conjunction with north-westerly winds swinging around to a south-westerly.

Access and ensure you understand predicted tide times and weather reports. Some of your neighbours may be able to help. Information about tides and weather forecasts are available from sources including the Bureau of Meteorology (www.bom.gov.au).

Prepare your Household Emergency Management Plan (HEMP)

The best way to cope with and recover from a flood is to be aware when it may occur, what happens when it does occur, and how to protect yourself, others, and your property by preparing your HEMP before the next storm surge flood. Don't forget to include your pets in the plan.

As part of preparing your HEMP, consider preparing your household emergency kit. Store it in a convenient and easily accessible location that everyone in the household knows. Check the kit at least twice a year (e.g. at the same time as changing household smoke detector batteries) and ensure torch batteries are still charged. Store important documents, computer backups, photos, and memorabilia in waterproof containers in a safe place in the house, or in a readily available location if you intend to take them if you evacuate.

Communications are an important component of preparing the HEMP. Telephone landlines are likely to be inoperative from the early stages of a flood, so prepare alternative arrangements (e.g. a mobile phone may be an option so you should therefore ensure that your mobile phone is fully charged).

Prepare yourself and others

Consider the medical and physical condition of yourself and others in the household in terms of coping with a flood because emergency services may not be able to access the settlement for several hours due to floodwaters. If there is any doubt, the first consideration in any plan should always be to leave before the flood.

Ensure you and others are aware of the conditions when a flood may occur. You and others should also be aware of the HEMP, including the location of refuges, evacuation routes, and the reading of water depth markers that indicate the height of floodwater over roads.

In your planning, establish how to turn off the power (mains electricity), gas, water and solar and how to sandbag toilets to prevent floodwater entering the septic system. Identify higher places (e.g. on a bed) where you can put any items of value, and identify the safest place to go within the house if considering staying during a flood.

Your household may be without services – including power and water – owing to damage caused by a flood. You may need to be self-sufficient for up to 72 hours (or longer in some circumstances).

Prepare your property

In preparing your HEMP, take the time to assess your house and property for hazards and risks from flooding. Modifications may be required to address any identified problems; otherwise annual checks may be acceptable. Seeking professional advice, such as from a builder or engineer, about the structural integrity of the house, particularly the underfloor supports (stumps) is advisable. In a previous flood, a house slumped after floodwaters gouged around the stumps.

Household electrical systems may be susceptible to floodwater damage, which can result in harm to people or damage to your property. Discuss with an electrician whether there is a need to upgrade the switchboards, fit safety switches, raise the heights of power points, etc.

Bottled gas systems may require inspection, particularly their location and security, to prevent gas escaping. Inspect household septic systems to ensure vents are raised or fitted with 'one way flaps'; and the tops and access points are correctly sealed to prevent them filling with floodwater and to stop contaminated water and material leaking into floodwaters.

Chemicals and hazardous substances require correct storage to prevent contaminating floodwaters. Items around the property and in sheds, which floodwaters can damage, may need to be stored in raised locations. These items could become trip hazards during a flood.

If your property is left vacant for long periods, you should consider putting precautions in place in anticipation of a flood (e.g. sandbag toilets).

Prepare with your neighbours

Working together with your neighbours can be invaluable to assist you prepare, cope and recover from a flood. Talk to your neighbours about whether they or you require assistance before or during a flood. Let them know if your plan is to stay or leave.

Check your insurance cover

Insurance policies differ from one insurer to another as to whether they will insure properties against flood damage. For those insurers who do offer flood insurance, it is important to obtain advice about the insurer's definition of 'flood' to ensure it covers storm surge floods.



ALERT

Be aware on days of predicted 'higher' high tides

Note the days of predicted 'higher' high tides and monitor weather forecasts. Visually monitor the weather during these days and listen to the radio for warnings. If weather conditions are similar to those of previous storm surge floods, consider checking seawater levels or flood indicators before the predicted high tide.

If seawater levels are rising to higher levels before the high tide predicted time, this could indicate the formation of a storm surge flood.

Act sooner rather than later

If there are any concerns about the wellbeing or safety of you or others in your household, consider evacuation before the predicted time of high tide.

Implement your Household Emergency Management Plan

Implement your HEMP and contact emergency services. You may not need their help, but others could. Locate and secure your pets.

Secure your property

Prepare your property for the possibility of flooding, as outlined in your plan. Importantly, turn off mains power, gas, water and solar. Sandbag toilets and floor vents. If safe, move vehicles to higher ground.

Stay or leave

When preparing your plan, you should have decided whether to leave the settlement, find a refuge in the settlement, or stay in your house. There is no way of predicting the seawater level height of future floods; it may be the same, lower, or higher than previous floods. Whatever your decision, get to that location as soon as possible.

Find refuge

The Boat Ramp car park may provide a 'refuge of last resort' – however, it may have floodwaters over its surface. The Boat Ramp car park has no facilities other than toilets. Flooding of the Gawler River system may cause Salt Creek to flood, with the potential of increasing the water level height over the Boat Ramp car park.

Some houses in the settlement with higher floor levels may provide alternative refuge options.

Look after neighbours

Let your neighbours know as soon as you can of the possibility of flooding and if you intend to leave. Do they need assistance with preparing their property or moving to a refuge?

Check the AlertSA website or app

AlertSA is a South Australian Government portal for providing real-time warnings on floods, fires, storms, earthquakes, power outages, road closures, traffic delays and transport disruptions, with related emergency information to help people respond to and recover from events and emergencies.

Visit the AlertSA website at www.alert.sa.gov.au, where you can also download the free mobile phone app. You can use the app to create 'watch zones' to receive alerts directly to your phone 24 hours a day about events and alerts in your area of interest.



FLOOD

Take care moving around

Avoid driving or walking through floodwater if possible. During the course of the flood, floodwaters in some areas may be over 1 m deep and of variable velocity, making driving and walking hazardous.

Floodwater will be murky, making it difficult to view the ground and affecting safe footing. Snakes, rats, floating debris and other unseen hazards may be in the floodwater.

Vehicles have stalled in rising floodwater, temporarily trapping their occupants. During a previous flood, the road surface in at least one location deteriorated, forming a 'sinkhole'. Floodwater is essentially seawater, which is corrosive to some materials and metals. Electronics and wiring are susceptible, particularly those in vehicles. Exposure to or immersion in floodwater may render vehicles irreparable.

Be aware of contaminated floodwater

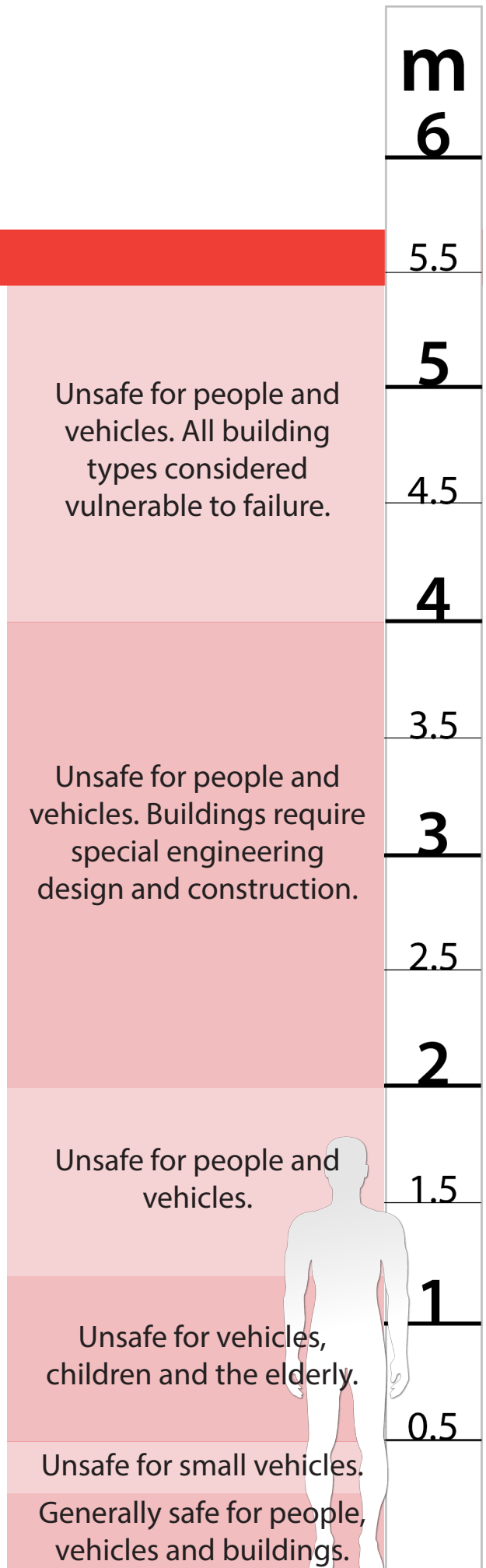
Avoid entering floodwater as it could be contaminated. Avoid any contact with the floodwater with your skin and eyes. There are a number of different sources of contamination, including wastewater, material being discharged from flooded septic systems, and chemicals or hazardous substances that have been poorly stored in and around properties or illegally dumped adjacent to the community.

Be prepared for emergencies

Emergencies may occur during a flood, including fire, medical emergencies and the need to rescue stranded residents. Emergency services may not be able to gain road access into the settlement owing to the height of floodwater over roads. While paramedics might be able to access the settlement by helicopter, depending on availability this will take time. You may need to be self-sufficient for several hours.

HOW SAFE IS IT?

This guide shows flood depth and safety when water is flowing at less than 1 metre per second.





RECOVERY

Return home

Emergency services may prevent access to the settlement or parts of the settlement until they deem it safe.

When you return home, visually inspect your house and if it appears badly damaged or unsafe before entering. It is important to stay outside until a building inspector or engineer has checked it.

Your house should be checked for the possible presence of vermin. It is common for snakes, spiders and rats in floodwaters to end up in houses.

Have power and services checked

Electricity and floodwaters are a bad combination. Floodwater can cause damage to household electrical systems depending on their design, type, age, and condition. Following a flood, parts of the household electrical system may contain residue water and moisture.

Have the electrical system inspected by an electrician before turning the power back on. Gas systems may also have been damaged and require inspection by a gas inspector or plumber before use.

Flooded household septic systems may become inoperable. Flooded systems should be pumped-out before turning back on to prevent contamination of the Community Wastewater Management System (CWMS). Contact the Council Environmental Health Officer to inspect the system after a flood.

Residual floodwater in underground connection boxes may cause lengthy interruptions to landline telephone services and alternative arrangements (e.g. mobile phone) may be required.

Clean up

It is important to start clearing up and drying your home as soon as possible after the flood.

All surfaces that were in contact with floodwater should be cleaned, and internal surfaces of the house treated with disinfectant.

Drying your house may take up to several weeks as floodwater moisture may have permeated into porous materials (e.g. plasterboard, timber framework, soft furnishings) and be trapped in cavities (including behind walls) creating an environment for mould to grow. Some moulds may cause ill health effects. The drying out process may require the partial removal of walls and the use of industrial portable driers. Obtaining professional advice is advisable.

Any clothing, bedding, and soft furnishings will need cleaning and drying to prevent the growth of mould spores. Food exposed to floodwater will need to be disposed of.

Be aware of health effects

As a precaution, assume all floodwater and sediment are contaminated, and avoid skin and eye contact. Protective equipment will be required for all tasks (e.g. strong boots, long pants and long sleeves, eye protection and gloves).

Mosquitoes that live in salt marsh environments lay their eggs after floodwaters recede and can be carriers of various viruses, including Ross River fever and Australian encephalitis. After a flood, it is advisable to contact SA Health to treat the area for mosquitoes.

Household water storage and pipes requires inspection to ensure they are safe from damage and not contaminated by floodwater. Boiling of drinking water is important until the system is safe. Have the system professionally inspected and contact the Council Environmental Health Officer for advice.

Contact your insurer

Notify your insurance provider early – they may require an assessor to visit your property as part of the claim. Most insurance companies have specialist contract services available at short notice who are skilled in flood clean up and repairs.

Work with the community

Research has shown a resilient community is one whose members connect to one another and work together in ways that enable it to function in the face of stress and trauma. Following a flood, check on the welfare of your neighbours as soon as possible, particularly those who stayed in their house during the flood. The most vulnerable people in your community, the elderly or those with medical/physical conditions, may need your help.

Don't be embarrassed to ask for help from people other than family and friends. It is likely there will be individuals and groups in the broader community who are happy to provide assistance.



4 WHAT IS A HOUSEHOLD EMERGENCY MANAGEMENT PLAN?

The HEMP is a plan developed by each individual household as to how they will prepare, cope, and recover from a flood. The information in this CEMP can help households to design and prepare their own HEMP to protect their property from damage and their household from harm during a flood.

SAFR is a simple acronym that defines the four stages of a storm surge flood, and assigns actions that individuals and the community can take to protect property from damage and people from harm.

The HEMP SAFR fridge magnet, kept in a prominent location on the fridge door, is designed to be a visual prompt for all members of the household about key actions to be taken during the four stages of storm surge flood.

Secure This is the stage before there is a threat of a storm surge. An example of an action is the preparation of a Household Emergency Management Plan (HEMP) and ensuring everyone in the household is aware of it.

Alert This is the stage when the conditions of a storm surge are forming or present (predicted high tide and strong wind from the northwest swinging to the southwest) and flooding may be imminent. An example of an action is checking the predicted time of the high tide and visually checking seawater levels and markers.

Flood This is the stage during the rising and receding of the floodwaters. An example of an action is avoiding driving through floodwaters.

Recovery This is the stage after the receding of floodwaters. An example of an action is the drying out of a flooded house to prevent mould growing.

For emergency help from the SES call 132 500.
For life-threatening emergencies call 000.
For health advice from HealthDirect call 1800 022 222.

For flood alerts and updates listen to 891 ABC Adelaide (891 AM) and visit www.alert.sa.gov.au.

Weather and tide information is available at www.bom.gov.au.



Government of South Australia
South Australian Fire and
Emergency Services Commission



Images courtesy of Bing Maps, Mark Western, Debra Richards Photography and J. Knuett.