



DRAFT Community Coastal Flood Emergency Plan for the Goolwa and Mundoo Channel Communities

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The Community Coastal Flood Emergency Plan was prepared by URPS for the Goolwa and Mundoo Channel Communities. The development of this plan was jointly funded by the Coast Protection Board and Alexandrina Council.



We acknowledge the Ngarrindjeri People as the Traditional Custodians of the land and waters of Goolwa and Mundoo Channels and pay respect to their Elders past, present and emerging.

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1. Introduction

What is a Community Coastal Flood Emergency Plan?

This Draft Community Coastal Flood Emergency Plan has been prepared to support the Goolwa Channel and Mundoo Channel communities become safer and more resilient to the impacts from coastal flooding.

A resilient community is one that works together to understand and manage the risks that it confronts. Disaster resilience, like emergency management, is a shared responsibility and requires all levels of government, business, and individuals to work together.

This Plan provides information on:

- The coastal flood hazards that many lead to emergencies that affect the community, and
- The actions you can take before, during and after coastal flood events to help protect you, your family and neighbours and your property.

The Goolwa Channel and Mundoo Channel communities

The Goolwa and Mundoo Channel communities are located on Hindmarsh Island near the mouth of the River Murray, downstream of the barrages. The communities are home to a mix of permanent residents, businesses, non-permanent residents (holiday home owners) and a popular destination for visitors. The people who live in and holiday there enjoy the peace, quiet and solitude of the location and go there to relax and enjoy nature and nature-based recreation. A larger proportion of permanent residents are elderly, with younger families more commonly visiting on holiday. Residents and visitors alike value the areas' spectacular scenery, wildlife and historical landmarks and call it a 'magic' place.



Why do we need a Community Flood Emergency Plan?

The Goolwa and Mundoo Channel community's coastal location and low elevation mean they are at risk of flooding. The physical risks from flooding are exacerbated by the relative isolation, low-elevation access roads and often unreliable electricity and mobile phone coverage.

Currently, coastal flooding has occurred during elevated high tides and storm surges, impacting the boat ramp, carpark and encroaching to the floor level of the amenities block at Mundoo Channel. The flood waters at this level inundate the road and private properties in places but at shallow depths. Generally, the terrain and road surfaces of the land along the Goolwa Channel are approximately 0.3m higher than along Mundoo Channel, meaning that there are currently less impacts along Goolwa Channel during these high water events. More information is found under Section 3 of this Draft Plan.

Sea level rise associated with a changing climate will further exacerbate these risks. Council's Coastal Adaptation Study (2021) identified a high hazard rating for future erosion and inundation for the Goolwa and Mundoo Channel communities. The subsequent Alexandrina Coastal Adaptation Plan (2022) prioritised action for community engagement and planning for flood risk in these communities.

The aim of this Draft Community Flood Emergency Plan is to support the Goolwa Channel and Mundoo Channel communities to understand local flood risks and empower them to be prepared for and make informed decisions during and after flood emergencies.

Preparing this (Draft) Community Flood Emergency Plan

The Draft Community Flood Emergency Plan (Draft Plan) for the Goolwa Channel and Mundoo Channel communities has been prepared with the community, for the community. This has enabled local people to share their experiences with previous floods, and to develop their own ideas for the actions they can take, making sure this Draft Plan describes locally appropriate strategies.

The approach to develop this Draft Plan has been supported by a Project Reference Group that has advised on approaches to engage the community and content for this Draft Plan.

The development of this Draft Plan has included community workshops that have shared information about current and potential future flood impacts and included a presentation from the South Australian State Emergency Service (SASES) about flood preparation, response and recovery.

Engagement with Ngarrindjeri Nation has provided information on the development of this Draft Plan.

This Draft Plan will now be consulted on through a community workshop and survey. Feedback will be used to finalise the Plan, which will then be shared with the community.

2. Coastal flood emergency planning

What does coastal flood emergency planning involve?

Flood emergency management planning is broken into three key phases: before, during and after.

The **'before'** phase involves prevention and preparedness arrangements – these are actions that you can take before a flood event occurs. While coastal flooding of the Goolwa and Mundoo Channel communities cannot be prevented, you can take to action to minimise damage and prepare for flood events. Understanding the flood risk of your area, when flooding is likely to occur, the potential impacts flooding might have on you or your property, how to protect your property and when you might need to evacuate are important 'before' actions. Many of these planning actions can be assisted by preparing your own Household Flood Emergency Management Plan.

The **'during'** phase is about the actions you and others take in response to a coastal flood event. This is when you activate your preparedness arrangements and plans to minimise the impact of flooding. This can include actions such as securing your property and valuables, checking on your neighbours, deciding whether to stay or evacuate, and following the advice of emergency services.

The **'after'** phase is about the recovery efforts once flood waters recede. This includes returning to your property, being aware of hazards, cleaning, repairing and looking after your physical and mental wellbeing.

People who take action to get prepared for a coastal flood before it happens are more likely to keep themselves, their families, their pets and their properties safe during a flood.

This Draft Plan does not directly address risks associated with other emergencies, however by preparing for flood-related emergencies, you and your community will be more resilient and better prepared to cope with and recover from other emergencies that may occur.

Roles and responsibilities for flood emergency management

Flood management in South Australia is a shared responsibility. The Australian Government, State Government, local governments, community and industry all have a role to play.

The State Emergency Management Plan identifies the roles and responsibilities for hazard risk reduction and the management of emergencies in South Australia.

The **State Government** and government agencies have primary responsibility for addressing emergency management in the state.

The **Australian Government** has a role to assist where the State Government is unable to meet a need or seeks assistance, but the primary role lies with the State Government.

The State Emergency Management Plan identifies specific government agencies to manage key hazards. The **Department for Environment and Water (DEW)** is the flood hazard risk reduction leader. As the hazard risk reduction leader, DEW undertakes a leadership role for the planning of emergency management activities relating to flood, and ensures that all aspects of the State's approach to the flood hazard are coordinated.

The State Emergency Management Plan also identifies control agencies, appointed to take charge during an emergency. The **South Australian State Emergency Service (SASES)** is the control agency for flood and extreme weather. SASES is responsible for responding to extreme weather and flooding events in order to minimise the loss of life, injuries and damage.

The SASES is responsible for monitoring for potential emergency events, where appropriate taking actions to prevent an emergency event occurring, and taking control of the response to the emergency. The SASES issue advice and warnings for the community. More information on these warnings is provided in section 6.

Local governments (councils) support state emergency management arrangements and have responsibilities to protect their areas from hazards and provide for the welfare and wellbeing of their communities (under section 7 of the *Local Government Act 1999*). They also contribute to emergency management through routine services such as infrastructure provision, relay the communications received from the SES to the community, and integrating hazard risk into their governance and decision making.

The **Bureau of Meteorology (BOM)** issues Severe Weather Warnings whenever damaging to destructive winds, or heavy to intense rainfall, is occurring or expected to occur. More information on these warnings is provided in section 6. The BOM monitors sea levels and can issue warnings specific to the Gulf, which may make mention the broader impacts this may have across other South Australian coasts.

Individuals and communities also need to understand the risks they face and their own role in preparing for, responding to and recovering from emergencies. Being prepared is a personal responsibility. The better prepared individuals are, the better they can cope with and recover from an emergency.

3. Why does coastal flooding occur along the Goolwa and Mundoo Channels?

Coastal flooding along the Goolwa and Mundoo Channels is primarily driven by two key factors, storm surge and elevated high tides.

Storm surge is a temporary and abnormal rise in sea level that occurs during intense storms. Storm surge occurs when low pressure systems pass across the ocean, the rotation of the pressure system combined with strong winds pushes the elevated ocean water towards the coastal. As the storm approaches land, the water piles up, leading to a surge that can inundate coastal areas. The intensity of the storm can depend on the size, speed and direction of the storm and the orientation and topography of the coastline.

Elevated high tide events occur when natural tidal cycles elevate sea levels above normal levels, which can inundate low lying land even without the combined impact of storm surges.

Along the channels, two high tides and two low tides usually occur each day, caused by gravitational forces. Typically, the time between each successive high (or low) tide is about 12 hours.

The extent and depth of coastal induced flooding along Goolwa and Mundoo Channels are influenced by the following local conditions:

- **Topography:** the land adjacent to the Goolwa and Mundoo Channels is particularly low lying, land levels are typically less than 2m AHD. This means that small elevations in water level can overtop the land.
- **Elevated high tide levels:** often referred to as king tides, are typically experienced in winter months. Historical tide recordings at the Goolwa barrage have shown the highest tides typically occur from May to October, although there are recorded high tide events outside of these periods. The time in which it takes for the flood water to recede are within the tidal cycle period, i.e. typically recedes within hours rather than days.

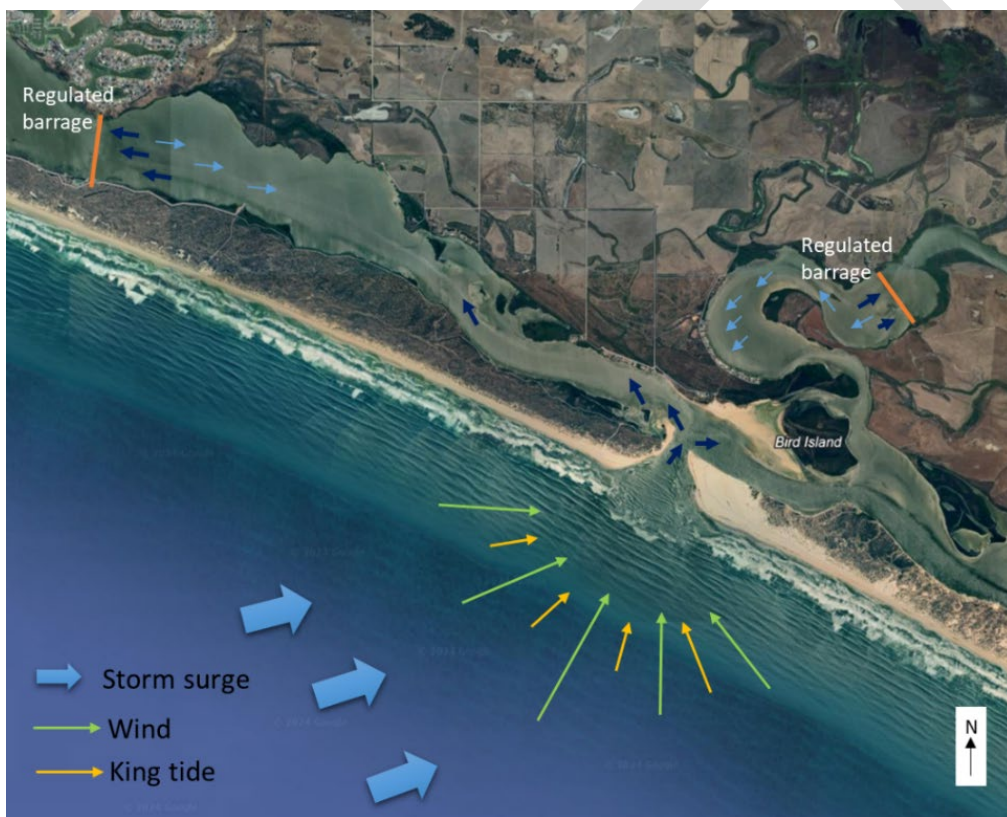
Elevated tides are considered to be the most influential factor for flooding of the Goolwa and Mundoo channel, given the low lying land levels.

- **Storm surge:** when low pressure systems travel across Encounter Bay, these create a surge of water approaching the Murray Mouth, typically coinciding with strong winds. An increased volume of water travels through the Murray Mouth towards the Goolwa and Mundoo barrages. The wind direction and duration of increased wind speeds can influence how much water is pushed through the Murray Mouth. Wind directions from the WNW through to the ESE will increase the volume of water which is pushed through the Murray Mouth.
- **Regulation of the barrages:** the regulation of the Goolwa Channel and Mundoo Channel barrages are controlled by SA Water. The barrages are typically closed (regulated) during the winter months. During high tide and storm events the elevated water levels in the

channel push against the barrages creating a reverse flow of elevated water. The reverse flow then pushes back towards to low lying land of the channels before receding back out of the Murray Mouth.

- **Width of the Murray Mouth:** the opening of the Murray Mouth is regularly maintained via dredging, however the width of the Mouth can vary throughout the year due to natural coastal processes (i.e. wind and wave directions, frequency and duration of stormier and/or calmer periods). When the Mouth is narrower, during periods of storm surge and elevated water levels, it can influence how quickly the water can flow back out through the Mouth. When the Murray Mouth is narrower, flood waters are likely to take longer to recede.

These impacts are illustrated in the figure below.



Influences on coastal flooding

Climate change impacts on coastal flooding

Sea level monitoring has shown that sea levels are already rising in South Australian at an average of 1.5 – 4mm per year and this is projected to continue. Relatively small changes in average sea level can result in major increases in the frequency and extent of seawater flooding events¹.

¹ DEW (2023) South Australia's environmental trend and condition report cards – sea level.
https://data.environment.sa.gov.au/Content/Publications/RC2023_RC_CLI_CLI_SeaLevel.pdf

4. What are the risks associated with flooding?

Flooding along the Goolwa and Mundoo Channels can have consequences for the community, built environment and natural environment.

The impacts of flooding may be direct (for example the flooding of homes, injuries to residents or visitors or damage to the environment or infrastructure) or indirect (for example mental health impacts that may result from isolation or physical impacts and financial consequences).

Risks to the community

Risks to the Goolwa and Mundoo Channels' **communities** include:

- Injuries or fatalities resulting from people entering floodwaters (either on foot or in a vehicle).
- Injuries or fatalities resulting from people trying to protect their property.
- Injuries or fatalities associated with clean-up or recovery efforts, including risks associated with electrocution, contaminated water or mould.
- Flood-induced stress and mental health impacts, during and after a flood event.
- Isolation or inability to get to or leave the settlements, particularly for people with vulnerabilities including the aged and people living with physical disabilities or medical conditions.
- Community disruption, if homes are flooded or uninhabitable or essential services are disrupted including telephones, electricity or water supply sometimes for up to several days.
- Financial impacts associated with repairing damage to properties, buildings or contents.



Flood waters surround properties along Mundoo Channel, April 2023 (Photo B Wright)

Risks to the built environment

Risks to the Goolwa and Mundoo Channels' **built environment**:

- Damage to the contents, building structure and condition of houses.
- Damage to jetties and boat ramps.
- Damage to household wastewater management systems (on-site septic).
- Inundation and damage to roads and culverts, restricting access and egress and increasing the risk of accidents.
- Damage to infrastructure including electricity, water supply and transportation networks.
- Damage to flood mitigation infrastructure including private levees.



Flood waters over the Mundoo Channel car park and boat ramp, April 2023 (Photo: B Wright)

Risks to the natural environment

Risks to the Goolwa and Mundoo Channels' **natural environment**:

- Spills of hazardous materials including chemicals or wastewater into the channels with potential to affect our aquatic and terrestrial ecosystems, including native plants and animals.
- Erosion of shorelines along the channel.

5. What can you do to manage flood risks?

Everyone in the Goolwa and Mundoo Channel communities will be impacted when a coastal flood event occurs, and everyone has a role to play in managing flood risks.

Managing flood risk means thinking about what you would do before, during and after a flood event.

Emergencies are stressful situations. It can be difficult to solve problems and make good decisions in the middle of an emergency. By preparing a Household Flood Emergency Management Plan before a flood occurs, you can allow yourself and your family the time and space to work through your plan without any pressure. This will allow you to make clear and well thought-through decisions about how to look after the things that are most important to you.

The following sections provide general information on what you can do before a flood occurs, during a flood, and after a flood. A Household Emergency Management Plan template is provided at the end of this document for you to fill out.

Before – what to do before a flood happens

People who understand their risk and have prepared for flood events are more likely to keep themselves, their properties and their pets safe if it does flood. Thinking about what might happen to you if it does flood by developing a Household Emergency Management Plan is the best way for you to prepare.

The Household Emergency Management Plan template provides forms and checklists to help you consider the points described below.

Know your risk

- Find out about your flood risk. Alexandrina Council undertook a Coastal Adaptation Study for the Murray Estuary Settlements in 2021. This study modelled likely current and future flood scenarios for the Goolwa and Mundoo Channel communities. The report and factsheets can be downloaded from Alexandrina Council's website at <https://www.alexandrina.sa.gov.au/home>. Alexandrina Council and the SASES can provide more information if required.

SASES – phone 8115 3800 or online via <https://www.ses.sa.gov.au/about-us/contact-us/>
Alexandrina Council – phone 8555 7000

- When has it flooded, where exactly, how quickly and for how long?
- Is your home likely to become inundated or isolated?

Think about how you might feel or think if it does flood

- Consider how you might feel if your property or home gets flooded. People react differently to stressful situations and how you react might be different to other people in your household.
- How do you manage other stressful situations in your life? Do you have any techniques that might help you in the event of a flood?
- Remember that in a flood there are people around to help you. Identify which of your neighbours, friends and family will be most useful to help you.

Keep an eye and ear on the weather

- Stay alert to the weather outdoors.
- Check tide predictions for the coming weeks and months. The Bureau of Meteorology provides predictions for Victor Harbor which approximate the Goolwa and Mundoo Channel tides (<http://www.bom.gov.au/australia/tides/#!/sa-victor-harbor>). Alternately, WillyWeather provides secondary tide predictions and swell conditions for Murray River Entrance (<https://tides.willyweather.com.au/sa/fleurieu-peninsula/murray-river-entrance.html>) .
- Be aware on days of predicted 'higher' tides, particularly between May and October.
- Check SES website and follow social media platforms.
- Listen to local radio and check the Bureau of Meteorology website or the BOM weather app for warnings.
- Check seawater levels and if they are rising higher before the predicted high tide time, this could indicate the development of a storm surge tide.

Check your house and property are 'flood ready'

- Do you know the elevation of your house's floor level?
- How will you protect your house and contents in the event of flood?
- How will you prevent water entering your house?
- Will you need sandbags and sand?
- Could you install flood shields or gates to prevent flood water entering doors, windows or front and backyards?
- Will you need to sand bag toilets or tank covers to prevent flood water entering your septic system?
- Do you need to move valuables, furniture, floor coverings or other contents?
- Is there anything in your shed you need to move?

- Is the building structurally sound?
- Could electrical systems (power points or switch boards), septic systems or bottled gas be inundated by flood waters?
- Do you keep any hazardous substances including fuel, garden chemicals or poisons in your house or shed? Are hazardous substances stored out of the way of possible flood waters?
- If your property is left vacant for long periods, ensure it is 'flood ready' each time you leave.

Keep your important records safe

- Keep important records such as passports, marriage and birth certificates, wills, financial records, photos and computer back-ups together in a safe place ready to pack into a waterproof bag in case you need to leave your house.

Check your insurance

- Does it cover your property and contents for flood damage specifically from storm surge (coastal) floods?
- Have you got enough insurance to repair or rebuild your home if it is damaged?

Plan for what you will do before and during a flood – prepare a flood action plan

- How will you protect your house in the event of flood?
- How will you prevent water entering your house?
- Will you need to turn off water, electricity, solar or gas?
- What will you do if it floods at night?
- Will you need sandbags and sand?
- Are you going to stay at home and wait for the flood waters to recede or will you go somewhere else?
- If you do stay, is there a higher place where your family and pets could stay dry?
- If the electricity is cut, how long will you be able to stay without a hot water, flushing toilets, or cooking?
- Do you have enough medication, food (including pet food), and fresh water if roads are cut off?
- Do you have phone reception if landlines or NBN are down?

- What will you do in an emergency, if roads are closed due to flooding and emergency services, including ambulances, cannot access your area? Council closes roads when the water over road exceeds 30cm.
- If you are going to leave - when will you evacuate and where will you go? Council closes roads when the water over road exceeds 30cm. If you wait too long, you may not be able to leave the area.
- How you will care for or evacuate your pets if needed?
- What will you do if you are not home?
- Where will you go if you cannot get back to your home?
- Is there someone who can help protect your house if you are away?

Keep a list of emergency numbers

- Keep local emergency numbers handy (near your phone, in your mobile and on your fridge).

Create an emergency kit

- Including a first aid kit, torch, battery operated portable radio, spare batteries, emergency numbers etc.
- Keep it in a handy place known by all household members. See the checklist in the Household Emergency Management Plan for what to include.

Plan for what you would take if you need to evacuate

- Identify important items you will take (along with your emergency kit) when you evacuate, for example important documents, medicines, photos, money, credit cards, mobile phone, dry clothes and blankets, non-perishable food for people and pets, jewellery or other valuables that would cause distress if they were lost.

Share and practice your plan

- Share your plan with all those in your household (as well as carers, visitors and your neighbours). Make sure everyone understands the plan and what you will do if a flood warning is issued.

During – what to do when flooding is likely or a warning is issued

You may not receive warning that a flood is likely however you may notice water levels rising and experience storm conditions.

An elevated high tide or flood warning may be issued however if this does occur there may be minimal notification.

Emergency assistance may not be immediately available so it is important you are prepared to look after yourself.

The Household Emergency Management Plan template provides forms and checklists to help you consider the points described below.

Know who to call

- In a life-threatening emergency, call 000 (triple zero).
- For emergency help in floods and storms, call the SES on 132 500.
- For current information on floods and storms, call the SES on 1800 362 361.
- Keep local emergency numbers handy (near your phone, in your mobile and on your fridge).



Flood waters approaching Mundoo Channel Drive, April 2023 (Photo: B Wright)

Secure your property and valuables

- Secure your property to prevent water entering your house.
- Turn off water, electricity, solar or gas.
- SA Power Networks (SAPN) may disconnect power supply should infrastructure be inundated with flood water or potential for harm due to electrical hazards.
 - This disconnection may be at specific locations or further upstream within the electricity network.
- Sand bag toilets, drains and tank covers to prevent flood water entering your septic system.
- Move valuables, furniture, floor coverings or other contents to high places like tables, benches or beds.
- Electrical appliances and equipment, including water pumps for tanks and house, should be unplugged and, where possible, moved to a high place.
- Think about what is in your fridge or freezer and what you will do with it.
- As a general rule, food will remain safe in your refrigerator for 2 hours without power. If the power is out for between 2 and 4 hours, the food will be safe to eat however do not put it back in the fridge. If it has been more than 4 hours, throw the food out.
- Food in the freezer will last longer. A full freezer can retain its temperature for up to 2 days. A half full freezer can retain its temperature for about 1 day.
- Lighter household items could be stored in ceiling space; or well above any flood levels
- Move hazardous substances including fuel, garden chemicals or poisons in your house or shed to higher places.
- Pack important records such as passports, marriage and birth certificates, wills, financial records, photos and computer back-ups together in a safe place ready to pack into a waterproof bag in case you need to leave your house.

Decide to stay or go

- Follow your flood plan which should identify if you will stay at home and wait for the flood waters to recede or go somewhere else.
- Find out if flood waters are predicted to peak at night time and review your decision to stay or go.
- If you are staying, go to a safe place where you and your pets can stay dry.
- If you are leaving, follow your evacuation plan, take your emergency kit and other important items and go to your identified evacuation location.

Take care moving around

- Avoid driving and walking through flood waters. People and vehicles can be swept away in fast moving floodwater. It's often deeper and faster than it looks. Submerged hazards such as debris or washed out sections of the road may not be visible. Flood water may be contaminated by sewage, toxic chemicals or other hazardous substances. Sea water is corrosive to some metals and materials and your car may be damaged.
- Unsealed roads are particularly vulnerable to damage when wet so avoid driving on them when they are inundated.
- If you have to walk through flood water, wear solid shoes and take a stick to check depth and surface stability.
- Stay away from fallen powerlines.

Check on your neighbours

- Inform them as soon as you can of the flood advice or warning.
- Inform them of your decision to stay or evacuate.
- Offer them assistance if you are able to do so, once your property is secure.

Stay tuned to local media

- Check local media including the ABC radio, websites and apps for information, updates and advice.

Follow the advice of emergency services

- Always follow the advice of emergency services.
- If roads are closed, do not attempt to use them. They may be damaged or dangerous. It is illegal to drive through a road closure and SA Police can enforce expiations.
- Council's operational policy is to close the roads once water exceeds 300mm deep, measured by the corresponding water level marker posts.

After – what to do after a flood

If you stayed during the flood, or if you are returning home after leaving, there may be damage to your home, essential services may not be working and there may be damage to local roads. If your house gets flooded it is important to start cleaning up and drying out as soon as possible to avoid the growth of potentially harmful mould.

If power supplies were flooded, SAPN will only reconnect mains power after an electrician has deemed and issued certificate of compliance for internal electrical system to flood effected areas. This may take several days.

The Household Emergency Management Plan template provides forms and checklists to help you consider the points described below.

Take precautions

- If roads have been closed or access restricted, wait for the roads to be reopened before going back to the Goolwa or Mundoo Channel communities. Floodways are reopened once water levels drop sufficiently and the roads have been checked to enable a risk assessment and observation of damages.
- Check www.traffic.sa.gov.au for the status of road closures.
- Assume all flood water is contaminated and prevent contact with skin and eyes.
- Do not drink mains tap water until it has been declared safe by SA Water. Boil water or drink bottled water.
- Check electricity and services.
- Look out for vermin including snakes, spiders and rats.
- Mosquito populations can increase after flood events. Make sure there are no small pools of water, including in old tyres, pot plant saucers and puddles. Cover up and use insect repellent on exposed skin.

Returning home

- Continue to listen to the radio, check local media for information and updates and follow the advice of emergency services.
- Access may be restricted to some or all of the communities if flood damage has made roads or areas unsafe.
- Don't be embarrassed to ask for help. There will be people in emergency services, the council, friends, family and neighbours who will be happy to help you.

Check electricity and services

- Make sure gas and electricity is turned off before you enter the house.
- Reconnection of flood inundated homes and properties will typically require qualified electrician to make safe before mains power is reinstated.
- SAPN will only reconnect mains power after an electrician has deemed and issued certificate of compliance for internal electrical system to flood effected areas.
- Don't use gas or electrical appliances until they have been checked for safety. Residue water and moisture can remain in electrical systems after floods.
- Phone lines may not function effectively if water has entered underground connection boxes. Contact Telstra by mobile if your landline phones are not working.

Inspect your home and property

- Use a torch to inspect inside and outside your house and any sheds or outbuildings. Do not use matches, cigarette lighters or naked flames due to the potential of flammable gas.
- Check for damage to windows, walls, floors and the roof.
- Look out for vermin. Snakes, rats and spiders in flood waters often end up in houses.
- If your home or property has suffered damage, call your insurance company as soon as possible to request an assessment and advice.
- Take photos or videos and make a list of all damaged items to assist with insurance claims.
- Check your septic system. Flooded septic systems may not operate effectively and may need to be pumped out before use. Council's Environmental Health Officers may issue notice of a flood impacted septic/soak system where its deemed unsatisfactory to reside as primary place of residence in the short term. Call the Alexandrina Council Environmental Health Team for more information.

Check on your neighbours

- Check in with your neighbours to make sure they're safe.
- If you are able, ask them if they need help cleaning up or getting help from others.

Cleaning up inside your home

- Take everything that is wet and transportable outside to avoid trapping moisture in the house and increasing the risk of mould.

- In dry weather, leave doors and windows open to dry out your home. Moisture may be trapped between walls and in porous materials such as timber and plasterboard.
- Turn on heaters (one per room) and leave on with the window open to assist drying.
- Wear rubber gloves and goggles during all clean up to protect your skin and eyes and protective shoes and clothing.
- Clean every part of your home that has been inundated by flood water with a commercial grade cleaner, then use disinfectant on all surfaces.
- Throw away food or medications that might be contaminated with flood water or that has been in a fridge without electricity for too long. It is recommended to not use food and medication if they were not refrigerated for more than 4 hours.
- If mattresses or upholstered furniture have been soaked with flood water, they should be disposed of.
- Where possible, remove the backs of furniture to allow air to circulate.
- Remove any carpet or floor coverings that have been soaked. Ensure floors are left to dry completely before laying any new floor covers.
- Wash all clothes and materials that get wet or muddy with hot water and, where possible, bleach, disinfectant or sanitiser.

Cleaning up outside your home

- Remove any rubbish, decaying vegetation, driftwood and stacked, damaged or loose materials away from your house, water meters, telephone and power lines.
- Make sure there are no pools or puddles of water for mosquitos to breed.
- Wash off mud or dirt from walls, verandas and decks.
- Ensure vents are clear of mud and debris.
- Make sure buildings are completely dry before starting repair work or painting. This may take several months.
- Oil locks and hinges to prevent rust developing.
- Make sure door and window frames are completely dry before replaning or adjusting. This may take several weeks.

6. Forecasts and warnings

Warnings are issued when there is a need to provide the community with information on heightened risk situations to enable them to make informed decisions about their own preparedness and safety.

Being tuned into warnings is critical to allow yourself time to implement your preparedness arrangements and plans before water levels raise, and to know exactly how the flood emergency is progressing.

Unfortunately, there is often a minimal notification period for abnormally high tides.

Warnings may not be issued for coastal flooding along the Goolwa and Mundoo Channels. This means a quick reaction time is required.

There is no official warning service specific for coastal flooding from elevated sea levels for this area by the Bureau. However, if the River Murray has significant flooding and water flows downstream there may be a specific warning message in place that is related to the River Murray that cover this specific area.

Warnings issued by the SA SES follow the new Australian Warning System. Each warning level has a set of action statements to give to the community clearer advice about what to do. The three-stage warning system aligns with an increasing level of threat, however it is important to note that warnings may not be issued sequentially if flood conditions change rapidly.

Bureau of Meteorology advice and warnings

<http://www.bom.gov.au/sa/warnings/>

http://www.bom.gov.au/weather-services/severe-weather-knowledge-centre/WarningsInformation_SW_SWW.shtml

The Bureau of Meteorology issues Severe Weather Warnings whenever severe weather is occurring in an area or is expected to develop or move into an area. The warnings describe the area under threat and the expected hazards. Warnings are issued with varying lead-times, depending on the weather situation, and range from just an hour or two to 24 hours or sometimes more.

Severe Weather Warnings are issued for:

- Sustained winds of gale force (63 km/h) or more
- Wind gusts of 90 km/h or more (100 km/h or more in Tasmania)
- Very heavy rain that may lead to flash flooding

Severe Weather Warnings can contain the following information:

- Standard Emergency Warning Signal (SEWS) - sounded only for the most serious events
- List of severe weather phenomena expected in the warning area
- Threat area
- Warning issue time
- (Usually) Description of the weather pattern, including forecast developments of significant weather systems
- Description of the threat
- Action statements
- Advice of next issue time

Severe weather warnings can be accessed here:

<http://www.bom.gov.au/sa/warnings/index.shtml?ref=hdr>

SASES advice and warnings

SASES is the control agency for floods and extreme weather which includes storms in South Australia. There is limited information available for the Mundoo and Goolwa Channel communities as there is no service provided by the Bureau and there are limited rainfall and water level gauge monitoring stations that SASES can use to issue early alerts and warnings. To ensure the community is informed and warned of actual or potential flooding, SASES may issue one or more of the following flood warning messages.

- Public Notice
- Flood Advice Message
- Watch and Act Message
- Emergency Warning Message
- Reduced Threat Message

The SASES provides the following flood advice and warnings:

	Flood – Advice - (Yellow)	A flood has started. There is no immediate danger. Stay up to date in case the situation changes.
---	--------------------------------------	---

	Flood - Watch and Act - (Orange)	There is a heightened level of threat. Conditions are changing and you need to start taking action now to protect you and your family.
	Flood - Emergency Warning - (Red)	An Emergency Warning is the highest level of flood warning. You may be in danger and need to take action immediately. Any delay now puts your life at risk.

The SASES display their warnings in a map and list view, accessible at <https://www.ses.sa.gov.au/incidents-and-warnings/incidents-and-warnings-map/>.

When available, they also identify locations from which to collect sandbags. <https://www.ses.sa.gov.au/incidents-and-warnings/sandbag-locations/>

7. Household Flood Emergency Management Plan Template

DRAFT

HOUSEHOLD FLOOD EMERGENCY PLAN

NAME

PROPERTY

EMERGENCY CONTACTS

WHEN TO CALL 000

Is your situation life-threatening due to any of the below?

- All fires, including bushfire and house fire
- Dangerous or life-threatening situations - Police
- Health & Medical - Ambulance
- Major gas leaks
- Accidents where there is fire or the need for medical assistance

WHEN TO CALL 132 500 (SES)

Flood or storm assistance:

- Serious damage to home
- Property at risk of flooding
- Tree fallen on car or home



Government
of South Australia



RESCUE

NON-EMERGENCY CONTACTS

Often situations that seem urgent and overwhelming can be dealt with using local services such as a handyman, arborist or local council.

For non-urgent situations visit ses.sa.gov.au or refer to the following numbers:

SES Infoline
1800 362 361

Police
Non-urgent matters
131 444

Crime Stoppers
(report crime anonymously)
1800 333 000

Alexandrina Council
8555 7000

Roads and traffic
Accidents resulting
in a traffic hazard
131 444

Major arterial roads
(dangerous conditions,
road hazards and
signal faults)
1800 018 313

Electricity
Power network faults
and emergencies,
including loss of supply
13 13 66

SA Water
Burst water mains
1300 650 950

Sewer blockage
or overflow
1300 883 121

Gas leaks
1800 GAS LEAK
1800 427 532

Health & medical
Health Direct - free
health advice from
trained clinicians
1800 022 222

Mental health
emergencies
13 14 65

**Poisons
information**
13 11 26

PREPARING YOUR HOUSEHOLD EMERGENCY MANAGEMENT PLAN

Follow the steps below to help you get prepared for a flood.

1. Your property

Review your property and location map.

2. Assess your knowledge and capacity

Assess your knowledge of flooding and your capacity to cope with and recover from a flood.

3. Write down important contacts and details

Write down the important contacts and details you might need if there is a flood.

4. Get your home 'flood ready'

Go through the flood preparation checklist.

5. Emergency kit

Prepare an emergency kit following the checklist.

If flood advice or a warning is issued...

6. Flood action checklist

Follow your flood emergency management plan that identifies what you will do if there is a flood.

7. Recovery checklist

Follow the checklist to make sure you stay safe after the flood and as you clean up.

1. Your Property

[Maps to be added]

2. Assess Your Knowledge and Capacity

Complete the checklists over the next two pages to assess your knowledge of flood risk and capacity to respond and recover

Your flood risk knowledge



This checklist can help you understand how much you know about floods and how vulnerable you might be to flooding.

☐

Do you know what causes flooding along the Goolwa and Mundoo Channels?

☐

Do you know the elevation of the land around your house?

☐

Do you know what the approximate floor level of your house is? Is your home likely to be isolated or inundated?

☐

Do you understand that you may not receive any formal warnings or notifications that coastal flooding is likely to occur?

☐

Do you understand the levels of warnings that may be issued for flooding along the Goolwa and Mundoo Channels?

☐

Do you know where to get information about an emergency?

If you don't know the answer to these questions, the Community Coastal Flood Emergency Plan for the Goolwa and Mundoo Channel Communities provides most of the information you need.

Further information can be obtained from:

SES - phone 8115 3800 or online <https://www.ses.sa.gov.au/about-us/contact-us/>

Alexandrina Council - phone 8555 7000 or online www.alexandrina.sa.gov.au

About you

Recognising your own abilities and limitations to cope with an emergency situation is really important so you can identify when you might need help, and plan for how you might get this help.



This checklist can help you think about your ability to cope with and recover from a flood.

☐

Are you able to cope with stressful situations? How do you manage other stressful situations in your life?

☐

Have you thought about how you might feel if your home or property is flooded?

☐

Are you in good health? Do you have any physical or mental health conditions that might impact how you respond to a flood?

☐

Do you require any assistance to manage your daily routine?

☐

Are you reliant on any medical equipment or medicines?

☐

Do you have someone you can get support from at any time?

☐

Do you know the names of your neighbours?

☐

Do you have any pets?

Your insurance



This checklist can help you think about your insurance.

☐

Does your home insurance cover your property and contents for flood damage specifically from storm surge (coastal) flooding?

☐

Is your insurance adequate to repair or rebuild your home if it is damaged?

It is important that you understand the types of flooding and water-related events that may occur to your home and property. Not all insurance companies cover actions of the sea (coastal flooding). Insurers do not cover future impacts of sea level rise.

If you are not sure, call your insurance company and ask them directly if you are covered for actions of the sea.

More information about the different types of insurance can be found on the Insurance Council of Australia's website <https://insurancecouncil.com.au/consumers/insurance-explained/>

3. Important contacts and personal details

Noting all your important contacts and details in one place will make it easier during and after a flood.

Household details

Name	Medicare number	Centrelink number	Passport number	Tax file number	Drivers licence number

Important contacts

	Name	Contact details
Doctor		
Hospital		
Dentist		
Other health specialist		
Vet		
Neighbour		
Neighbour		
Neighbour		

Utilities and services

Electricity - SA Power Networks - network faults and emergencies, including loss of supply	13 13 66
Water - SA Water - burst water mains	1300 SA WATER 1300 729 283
Alexandrina Council	8555 7000

Your utilities and services account numbers

	Account name	Account number	Other details
Electricity			
Water			
Phone			
Internet			
Other			

Insurance details

	Insurer	Policy number	Contact details
Home and contents			
Health			
Car			
Life			
Income protection			
Business			
Other			

4. Get your home flood ready

This checklist will make sure you and your home are as prepared as possible.

What is the approximate level of your house's floor level?	
How will you prevent water from entering your home if it is going to flood?	
What would you do if it floods at night?	
Could you install flood shields or gates to prevent flood water entering doors, windows and front and back yards?	
Might you need sandbags and sand?	
Are important records such as passports, marriage and birth certificates, wills, financial records, photos and computer back-ups stored together in a safe high place ready to pack if you need to leave?	
Do you have any valuables, furniture, floor coverings or other contents which may need to be moved if it floods? Where will you put these?	
Do you have any electrical systems close to the floor of your house? For example power points less than 0.5m above flood level? Could you get these moved higher if there is a risk they could get flooded?	
Do you have bottled gas?	

Is your home structurally sound?	
Have you got drinking water and non-perishable food items to sustain your household (including pets) for up to 72 hours in the event you become isolated if the causeway becomes unpassable?	
Do you keep any hazardous substances including fuel, garden chemicals or poisons in your house or shed? Are hazardous substances stored out of the way of possible flood waters?	
Is there anything in your shed you need to move?	

Decide if you will stay at your home during a flood or go somewhere else

I am planning on staying at home	I am planning on going somewhere else
☐	☐

If you are going to stay:

Where is the highest part of the building to shelter?	
Do you have water storage containers to fill in case the mains water is affected?	

If you are going somewhere else:

Where are you going to go?	
When are you going to go?	
How will you get there? Do you need someone to drive you?	
Who do you need to tell you are going? What will you need to take? Refer to the emergency kit checklist on the next page.	

EMERGENCY KIT

Checklist

Use this checklist to tick off the items as you put your emergency kit together



Equipment connected over the nbn™ access network will not work during a power blackout.

Make sure you have a battery powered radio and your mobile phone is fully charged.

Having an emergency kit ready to go can help you save precious time if you have to leave in a hurry.

My emergency kit has

- ☐ battery powered radio with spare batteries
- ☐ torch with spare batteries
- ☐ first aid kit
- ☐ candles and waterproof matches
- ☐ important papers including emergency contact numbers
- ☐ a copy of my Home Emergency Plans. Download a template from ses.sa.gov.au
- ☐ waterproof bag for valuables.

Other items to pack

- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____
- ☐ _____

Keep it on the fridge once completed and use it to remind yourself to check/restock your kit.

We will add these items when we are ready to leave

- ☐ mobile phone and charger
- ☐ prescriptions and medications
- ☐ toiletries
- ☐ clothing and strong shoes
- ☐ non-perishable food and drinking water
- ☐ anything special you need for other family members.

If you have pets don't forget leads, food and bowls too.

Useful tips

- keep your emergency kit in a waterproof storage container
- check and restock items regularly (eg. use-by dates on batteries)
- keep a list of emergency numbers near your phone or on your fridge.

June 2018 • SES0017



For life threatening emergency
Triple zero (000)

For emergency assistance
132 500

For more information
1800 362 361
ses.sa.gov.au

6. Flood Action Checklist

When flood advice or a warning is issued:

- ☐ Check on your neighbours to make sure they are aware of the warnings.
- ☐ Secure your property to prevent water entering your house.
- ☐ Switch off electricity, solar, water and gas, taking note of the time the electricity is switched off so you can keep food safe.
- ☐ Sand bag toilets, drains and tank covers to prevent flood water entering your septic system.
- ☐ Get your emergency kit ready and add the extra items you have identified you will take.
- ☐ Move valuables, furniture, floor coverings or other contents to high places like tables, benches or beds.
- ☐ Unplug electrical appliances and equipment and, where possible, move to a high place.
- ☐ Fill your water storages before flood waters rise.
- ☐ Keep your fridge and freezer closed as long as possible.

If you are you going to stay at home and wait for the flood waters to recede:

- ☐ Go to the highest place you can.
- ☐ Stay tuned to local media for information and updates.
- ☐ If it is safe and you are able to, check if your neighbours need assistance.

If you are you going to leave and go somewhere else:

- ☐ Pack your emergency kit and other important items.
- ☐ Leave.

Avoid driving or walking through flood waters.

People and vehicles can be swept away in fast moving floodwater. It's often deeper and faster than it looks. Submerged hazards such as debris or washed out sections of the road may not be visible. Flood water may be contaminated by sewage, toxic chemicals or other hazardous substances.

7. Recovery checklist

Take precautions

- ☐ If roads have been closed or access restricted, wait for the roads to be reopened before going back.
- ☐ Assume all flood water is contaminated and prevent contact with skin and eyes.
- ☐ Do not drink mains tap water until it has been declared safe. Boil water or drink bottled water.
- ☐ Check electricity and services.
- ☐ Look out for vermin including snakes, spiders and rats.
- ☐ Mosquito populations can increase after flood events. Make sure there are no small pools of water, including in old tyres, pot plant saucers and puddles. Cover up and use repellent on exposed skin.

Returning home

- ☐ Continue to listen to the radio, check local media for information and updates and follow the advice of emergency services. Access may be restricted to some or all of Webb Beach if flood damage has made roads or areas unsafe.
- ☐ Don't be embarrassed to ask for help. There will be people in emergency services, the Council, friends, family and neighbours who will be happy to help you.

Check electricity and services

- ☐ Make sure gas and electricity is turned off before you enter the house.
- ☐ Don't use gas or electrical appliances until they have been checked for safety. Residual water and moisture can remain in electrical systems after floods.
- ☐ Phone lines may not function effectively if water has entered underground connection boxes. Contact Telstra by mobile if your phones are not working.

Inspect your home and property

- ☐ Use a torch to inspect inside and outside your house and any sheds or outbuildings. Do not use matches, cigarette lighters or naked flames due to the potential of flammable gas.
- ☐ Check for damage to windows, walls, floors and the roof.
- ☐ Look out for vermin. Snakes, rats and spiders in flood waters often end up in houses.
- ☐ If your home or property has suffered damage, call your insurance company as soon as possible to request an assessment and advice.
- ☐ Take photos or videos and make a list of all damaged items to assist with insurance claims.
- ☐ Check your septic system. Flooded septic systems may not operate effectively and may need to be pumped out before use. Call the Environmental Health officer at Adelaide Plains Council for more information.

Check on your neighbours

- ☐ Check in with your neighbours to make sure they're safe.
- ☐ If you are able, ask them if they need help cleaning up or getting help from others.

Cleaning up inside your home

- ☐ Take everything that is wet and transportable outside to avoid trapping moisture in the house and increasing the risk of mould.
- ☐ In dry weather, leave doors and windows open to dry out your home. Moisture may be trapped between walls and in porous materials such as timber and plasterboard.
- ☐ Turn on heaters (one per room) and leave on with the window open to assist drying.
- ☐ Wear rubber gloves and goggles during all clean up to protect your skin and eyes and protective shoes and clothing.
- ☐ Clean every part of your home that has been inundated by flood water with a commercial grade cleaner, then use disinfectant on all surfaces.
- ☐ Throw away food or medications that might be contaminated with flood water or that has been in a fridge without electricity for more than 2 hours.

- ☐ If mattresses or upholstered furniture have been soaked with flood water, they should be disposed of.
- ☐ Where possible, remove the backs of furniture to allow air to circulate.
- ☐ Remove any carpet or floor coverings that have been soaked. Ensure floors are left to dry completely before laying any new floor covers.
- ☐ Wash all clothes and materials that get wet or muddy with hot water and, where possible, use bleach, disinfectant or sanitiser.

Cleaning up outside your home

- ☐ Remove any rubbish, decaying vegetation, driftwood and stacked, damaged or loose materials away from your house, water meters, telephone and power lines.
- ☐ Make sure there are no pools or puddles of water for mosquitos to breed.
- ☐ Wash off mud or dirt from walls, verandas and decks.
- ☐ Ensure vents are clear of mud and debris.
- ☐ Make sure buildings are completely dry before starting repair work or painting. This may take several months.
- ☐ Oil locks and hinges to prevent rust developing.
- ☐ Make sure door and window frames are completely dry before replaning or adjusting. This may take several weeks.