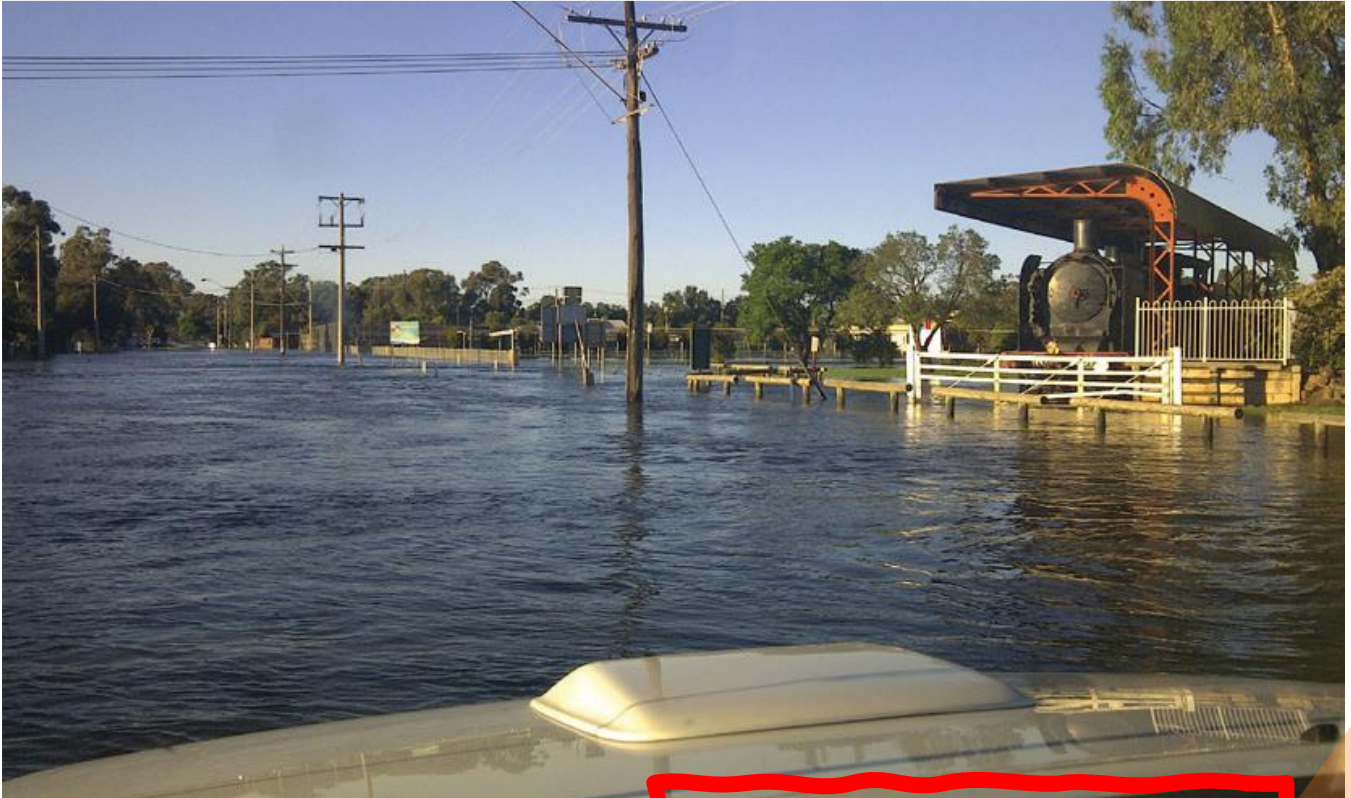




# Numurkah Local Flood Guide

Riverine and flash flood information for the Broken Creek and Muckatah Depression at Numurkah



## DRAFT

For community  
consultation & feedback.

Oct - Nov 2022

e: [northeast@ses.vic.gov.au](mailto:northeast@ses.vic.gov.au)

or ph: 9256 9650

by Sunday 4 Dec 2022

For flood emergency assistance call  
VICSES on **132 500**

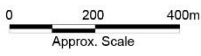


**GOULBURN  
BROKEN**  
CATCHMENT  
MANAGEMENT  
AUTHORITY

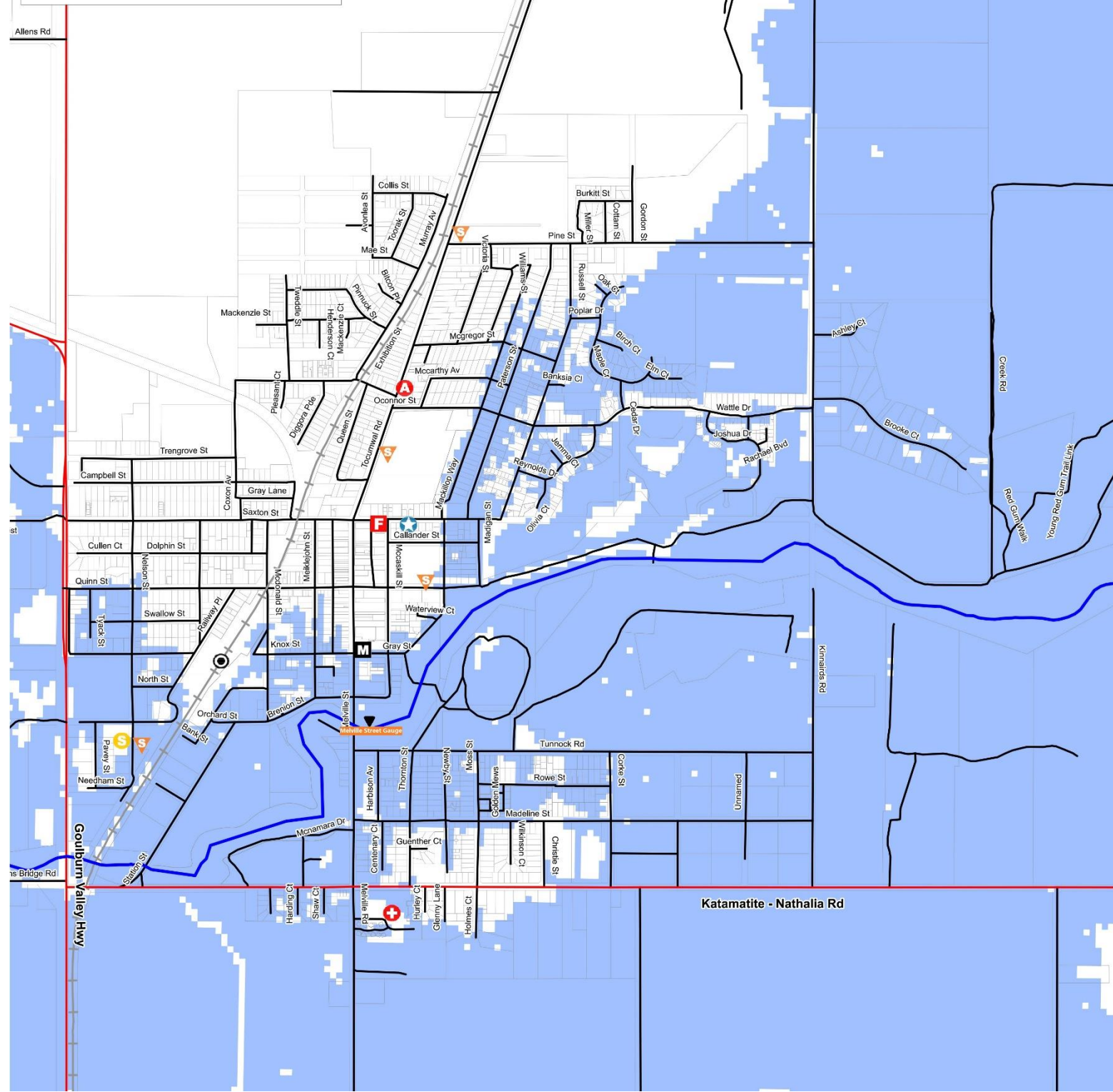


**LEGEND**

-  Police Station
-  Municipal Building
-  Fire Station
-  Railway Station
-  Caravan Park
-  River Gauge
-  VICSES Unit
-  1% AEP Flood Extent
-  School
-  Ambulance Station
-  Hospital
-  Railway
-  Major Road
-  Minor Road
-  Broken Creek



**DRAFT**  
For community consultation  
and feedback.



**Disclaimer**

This map publication is presented by Victoria State Emergency Service for the purpose of disseminating emergency management information. The contents of the information has not been independently verified by Victoria State Emergency Service. No liability is accepted for any damage, loss or injury caused by errors or omissions in this information or for any action taken by any person in reliance upon it. Flood risk information is provided by Goulburn Broken Catchment Management Authority.



### Are you at risk of flood?

This map shows the expected flooding in a 1% flood in Numurkah. A 1% flood means there is a 1% chance of a flood measuring 107.93 metres AHD, or 7.93 metres, on the Melville Street gauge in Numurkah in any year.

The Broken Creek catchment is a complex system that stretches from the Warby Ranges through Numurkah to Barmah. It includes the Muckatah Depression and the Boosey, Sandy, Broken, Major, Wild Dog, Box and Nine Mile Creeks.

Flooding in the Numurkah area can happen when floodwater from heavy rainfall in the upper catchments overflows the banks of the Broken Creek, or from the Broken River system (as happened in 1993), or when heavy local rain overwhelms creeks and drains, such as the 2012 record-breaking rainfall. The reason for this flood moving so quickly was that heavy rain fell twice in a week, and the sheer volume of runoff from rain that fell in both the wider catchment and the local area.

During large floods, the flat nature of the area and its location on the floodplain means isolation is likely for Numurkah and surrounding low-lying rural properties. Large flood events usually take more than a week to pass Numurkah with low-lying areas taking longer to clear and may increase damage.

Areas of town that may be affected during large floods include those south of the Broken Creek and East of Kinnairds Road. Major roads can be closed including the Goulburn Valley Highway, Katamatite-Nathalia Road and most roads across the Muckatah Depression and the Broken and Boosey floodplains.

### Did you know?

Numurkah has a long history of floods occurring on average every 18 years including 1916, 1917, 1939, 1956, May 1974, October 1993 and March 2012.

Markers indicate that the 2012 flood was one of Numurkah's highest and floodwater travelled much faster than expected.

The 2012 flood peaked at Numurkah just 14 hours after it peaked at Katamatite. In past floods, this journey had taken up to five days. The Melbourne to Tocumwal railway line held the first flow of water, with the main body of water reaching Numurkah 4 days later.

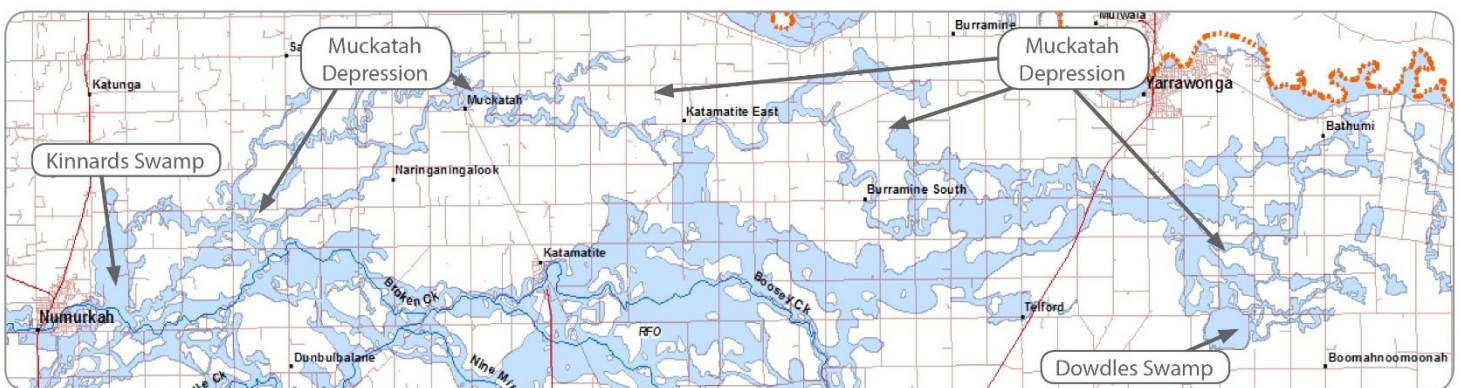


**No two floods are the same. Floods like this or worse could happen again.**

If you live in a low-lying area you may be at risk of flooding or need to detour around flooded areas. Knowing what to do can save your life and help protect your property.

**The Muckatah Depression** is a natural drainage basin covering 280 square kilometres. Extending from Dowdles Swamp near Bundalung and along the Muckatah Creek before joining Kinnaird's Swamp at Numurkah. Water draining from this basin can cause high water levels to stay around longer as it moves more slowly than the flooding in the Broken Creek in and around Numurkah (as seen in 2012).

Floodwater or runoff from the Muckatah Depression does not usually cause a second rise in flood levels. From the 1990s to mid-2000, a community surface drain scheme was implemented in the Muckatah Depression to help remove excess water from minor storm runoff and to slow and reduce water flows into the Broken Creek. During floods caused by heavy local rainfall however, floodwater spills out of the drains and spreads across the natural flow path of the Muckatah Depression floodplain.





## Goulburn Broken community Flood Intelligence Portal

A key role of the Goulburn Broken Catchment Management Authority (GBCMA) is to find out how far a flood might reach and how high floodwater might rise. Councils also have a responsibility to consider land subject to flooding in planning, zoning, and development approvals. Sharing flood risk information with communities is key to improving flood resilience. GBCMA, Moira Shire and other nearby councils have funded this web portal so community members can download property reports for addresses of interest.

**Disclaimer:**  
 This information does not replace the need for planning permits under the Municipal Planning Schemes, nor written advice from Catchment Management Authorities. Use of this web portal is subject to terms and conditions, which can be read and downloaded in the portal. By using this web portal, you are agreeing with these terms and conditions.

Go to [my.floodreport.com.au/gbcma](http://my.floodreport.com.au/gbcma) to:

- Search for a property of interest.
- Download **Property Flood Reports** to help you manage your flood risk.
- View **Flood Maps** based on:

**Historical Flood Data** relative to flood gauges (useful with height predictions in flood warnings) and;

**Design floods** like a “1% flood” which means there is a 1 in 100 chance (or greater) of this type of flood happening every year.



## Broken Creek flood levels at the Melville Street Gauge

The [Broken Creek gauge at Melville Street Numurkah](#) was changed from manually to automatically monitored by the Bureau of Meteorology (BOM) in 2016. While no two floods are the same, the below events happened before the gauge was updated and represent the Australia Height Datum (AHD) levels recorded at the time. Metres AHD is the height (elevation) above sea level. These days, flood heights will be taken directly from the Melville Street Gauge, so 107.93m AHD will be 7.93m at Melville Street Gauge.

Height	Impact/level
Height	<b>1917 flood level.</b>
Unknown	Although specific details are not available, these floods on the Murray River at Albury, Corowa and Yarrawonga were amongst this areas highest known floods. In Murray River floodwater spread into the Broken Creek system. This is unlikely to occur today with works completed for the Murray Valley Irrigation area.
7.93 metres or 107.93m AHD	<b>1% flood level</b> Height shown on map <b>page 2</b> .
7.90 metres or 107.90m AHD	<b>March 2012 and 1916 flood levels.</b> In 2012 over 160 buildings were damaged above floor level. The Shepparton-Numurkah railway line was badly damaged. 130 local roads were closed including the Goulburn Valley Highway, Katamatite Road and Numurkah-Nathalia Road isolating many properties. Floodwater from the Muckatah Depression added to flooding in Numurkah, Yarrawonga, Burramine South, Katatmatite East and Naring.
7.80 metres or 107.80m AHD	<b>May 1974 flood level.</b> During this flood very heavy rain fell across local catchments of the Muckatah Depression the Boosey, Broken, Nine Mile, Wild Dog and Box Creeks. The Broken, Nine Mile and Box Creeks all merged and flooding lasted nearly two months. Wild Dog and Box Creeks significantly added to flooding upstream of Numurkah. Commercial and residential areas flooded with 7 buildings damaged by flood water. Major sandbagging efforts by locals saved the town from more damage.
7.77 metres or 107.77m AHD	<b>October 1993 flood level.</b> This flood was caused by heavy rainfall across the Broken River area near Benalla causing significant flooding and damage to rural properties. No major effects in the Numurkah township. Katamatite-Nathalia Road was closed.
7.18 metres or 107.18m AHD	<b>Estimated 1939 flood level</b>
7.01 metres or 107.01 m AHD	<b>Estimated 1956 flood level</b>

### Staying Informed and Further Information

- Current warnings (VicEmergency) [emergency.vic.gov.au](http://emergency.vic.gov.au) 1800 226 226
- Bureau of Meteorology (BoM) [bom.gov.au/vic/warnings](http://bom.gov.au/vic/warnings) 1300 659 217
- VicRoads Traffic [traffic.vicroads.vic.gov.au](http://traffic.vicroads.vic.gov.au)
- Emergency Broadcasters  
ABC 97.7 FM  
HIT 96.9 FM  
TRIPLE M 95.3 FM  
SKY NEWS Television
- VICSES Social Media  
[facebook.com/vicses](https://facebook.com/vicses)  
[twitter.com/vicsesnews](https://twitter.com/vicsesnews)
- Preparing for Flood Emergencies [ses.vic.gov.au/get-ready](http://ses.vic.gov.au/get-ready)
- Creating an Emergency Plan [redcross.org.au/prepare](http://redcross.org.au/prepare)
- Catchment Management Authority [gbcma.vic.gov.au](http://gbcma.vic.gov.au) (03) 5822 7700
- Moira Shire Council [moira.vic.gov.au](http://moira.vic.gov.au) (03) 5871 9222
- National Relay Service (NRS) [relayservice.gov.au](http://relayservice.gov.au)

**Life-threatening  
Emergency  
000**



# Flood warnings and emergency checklist

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For community consultation and feedback.

## Flood warnings for Numurkah

For Numurkah, similar to other regional locations in Victoria where there is no specific flood warning system in place, the Bureau of Meteorology (BOM) does not provide predictions of creek heights or issue minor, moderate or major flood class warnings for Numurkah. **Instead, VICSES aims to publish information and warnings when there is verified local information, CMA intelligence and gauge observations.** In an emergency event, these warnings will be published on [VicEmergency](#) channels based on the same impacts as minor, moderate or major flooding (below).

Weather Warnings and Flood Watches for the Goulburn-Broken catchment issued by the BOM can provide information about when flooding is possible. **You can also monitor rainfall and creek levels in surrounding areas such as [Tungamah \(Boosey Creek\)](#) and [Katamatite on the BOM website](#).**

VICSES aims to publish information and warnings about potential and current flooding based on verified local information, intelligence and observations to [VicEmergency](#) channels. For the latest emergency updates, tune into emergency broadcasters and listen out for information about the Broken Creek, the Goulburn Broken Catchment or the Northern Country weather district.

## Bureau of Meteorology Warnings




The Bureau of Meteorology (BOM) issues a number of products about possible flooding and severe weather.

A **Flood Watch** means there is a developing weather pattern that might cause floods in one or two days. This service covers the whole state, including the Broken Creek catchment, and will be on [VicEmergency](#) channels.

A **Flood Warning** means flooding is about to happen or is already happening. There are minor, moderate and major flood warnings. **This service is only available where flood warning systems are in place.** Remember, in Numurkah, the flood warning system is not yet in place, so the BOM will not issue minor, moderate or major flood warnings yet.

**Flash Flooding** can occur quickly due to heavy rainfall. You may not receive an official warning. Stay informed- monitor weather warnings, forecasts and river levels at the [BOM website](#) and emergency information and warnings on VicEmergency

**Severe Thunderstorm Warnings** are issued when there is potential to cause significant localised damage through wind gusts, large hail, tornadoes or flash flooding and **Severe Weather Warnings** are issued when expected impacts are not directly related to thunderstorms or bushfires, like damaging winds or flash flooding.

 <b>Minor Flood Impacts</b> mean floodwater can:	 <b>Moderate Flood Impacts</b> means floodwater can:	 <b>A Major Flood</b> means floodwater can:
Spill over river banks and cover nearby low lying areas.	Spill over river banks and cover larger areas of land.	Cause widespread flooding.
Come up through drains in nearby streets.	Reach above floor levels in some houses and buildings.	Many houses, businesses are inundated above floor level.
Require the removal of stock in some cases.	Require evacuation in some areas.	Cause properties and whole areas to be isolated by water.
Cover riverside camping areas and low-lying caravan parks.	Affect traffic routes.	Closes major roads and rail routes.
Cover minor roads paths, tracks and low level bridges.	Require the removal of stock in rural areas.	Require many evacuations.
Affect backyards and buildings below floor level.		Affect utility services (power, water, sewage etc).



## VICSES Warnings

VICSES utilises the VicEmergency app, website and hotline to distribute flood warnings and emergency information. Communities can access this information through VICSES social media channels and emergency broadcasters.

VICSES warnings aim to provide you with information to help you make good decisions to protect yourself and your family. Warning levels are based on severity, conditions and likelihood that the emergency will impact the community.

WARNING LEVELS	
	<p><b>EMERGENCY WARNING</b></p> <p>You are in imminent danger and need to take action now. You will be impacted. A Major flood warning usually fits into this category.</p>
	<p><b>WATCH AND ACT</b></p> <p>An emergency is developing nearby. You need to take action now to protect yourself and others. A Moderate flood warning usually fits into this category.</p>
	<p><b>ADVICE</b></p> <p>An incident is occurring or has occurred in the area. Access information and monitor conditions. A Minor flood warning or Flood Watch usually fits into this category.</p>

EVACUATION	
If an evacuation is recommended, you will be guided to do so in the action statement in the warning.	
	<p><b>PREPARE TO EVACUATE/ EVACUATE IMMEDIATELY</b></p> <p>An evacuation is recommended or procedures are in place to evacuate.</p>

ADDITIONAL MESSAGES	
	<p><b>COMMUNITY INFORMATION</b></p> <p>Can be used as a notification that an incident has occurred but there is no threat to community; or to issue a newsletter containing updates for communities affected by an emergency.</p>
	<p><b>EMERGENCY ALERT</b></p> <p>During some emergencies, we may alert communities by sounding a local siren, or by sending an SMS to mobile phones or a voice message to landlines.</p>

## Your emergency plan

Emergencies can happen at any time and with little warning. People who plan and prepare for emergencies can reduce the impact and recover faster.

Taking the time to think about emergencies and make your own plan helps you think clearly, have more control and make better decisions when an emergency occurs.



Visit [redcross.org.au/prepare](http://redcross.org.au/prepare) start creating your plan.

- Remember, you may not receive any official warning.
- Emergency assistance may not be immediately available.
- Be aware of what is happening around you to stay safe.
- Never wait for a warning to act.



### Emergency Kit

Every home and business should have a basic emergency kit with supplies for 3 days. Get more information about [Emergency Toolkits](#). Check your kit often. Make sure things work. Replace out of date items.

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For community consultation and feedback.



When a warning is issued, have ready to use or pack into the kit:



Write YOUR important items below and tick off items as you pack them in your kit.



Consider your family's special needs eg. babies, elderly, or those living with disability

Photos			
Family keepsakes			
Valuables	Other		Other
Other	Other		Other
Other	Other		Other

# ARE YOU READY FOR AN EMERGENCY?

THE GET PREPARED APP PUTS EVERYTHING YOU NEED IN ONE PLACE.

- 1 MAKE ACTION PLANS
- 2 FIND YOUR EMERGENCY ALERTS
- 3 SAVE KEY CONTACTS

Download the Get Prepared app and make your plan, visit [redcross.org.au/getprepared](http://redcross.org.au/getprepared)





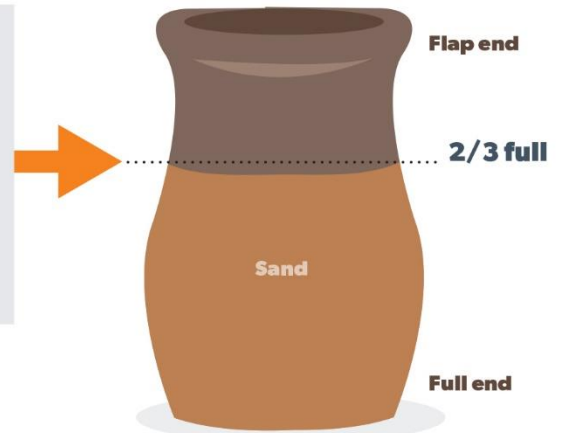


# Sandbagging

Sandbags won't stop the water completely, but can reduce the amount of water entering your home.

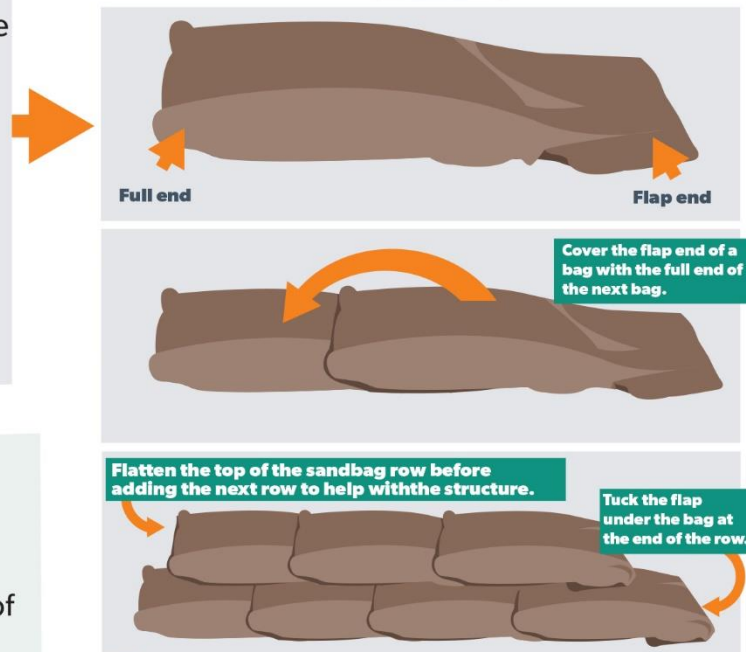
## How do I fill a sandbag?

- Only use sand to fill hessian bags. Do not use dirt.
- Only fill sandbag two-thirds full.
- Do not over fill the sandbag as it will be too heavy to carry.
- Do not tie the top of the sandbag.
- Take care when filling and lifting the sandbag, to avoid injury.



## How do I lay sandbags?

- Lay sandbags like brickwork. Stagger rows so that the joins do not line up.
- Start at one end and work to the other end.
- Ensure the unfilled part of the bag is covered by the next bag.
- Tuck flap under the bag at the end of the row.
- If the sandbag wall is going to be more than five (5) bags high, you will need to lay two (2) rows wide.



## Where do I place the sandbags?

- Place sandbags in plastic bags to cover drainage holes in home (e.g. showers, toilets, sinks) to stop back flow of water.
- Place a small wall across doorways, at least the height of the expected water level. Be careful not to trap yourself inside.
- If available, plastic sheeting may be used under sandbags to reduce the seepage.

### Block it

Toilets, bath and all drain holes



Plastic Sheetting



## What do I do once I have finished with the sandbags?

- Sturdy gloves should be worn when handling wet sandbags as they can contain chemicals, waste and diseases.
- Sandbags that have been in contact with floodwater need to be thrown away.
- Contact your local council to find out how to dispose of your sandbags safely.



# Flood checklist

Get ready, have a plan, know what to do...

Taking the time to plan for emergencies helps you think more clearly, have a greater sense of control, and make better decisions when an emergency happens.

## Make sure you'll receive warnings and emergency information in Victoria

- Install the VicEmergency App and create a Watch Zone
- Use [emergency.vic.gov.au](https://www.emergency.vic.gov.au): for all hazards, all emergencies
- Note the VicEmergency Hotline: 1800 226 226
- Note your local Emergency Broadcaster e.g. ABC Radio 97.7FM/106.5FM

## Find local flood information

- Find Local Flood Guides for most flood prone communities at [ses.vic.gov.au/get-ready](https://ses.vic.gov.au/get-ready)
- Connect with neighbours, other locals, or your local SES Unit to learn about past floods.
- Contact your Catchment Management Authority (CMA) for localised flood information [floodvictoria.vic.gov.au/prepare-prevent/risks](https://floodvictoria.vic.gov.au/prepare-prevent/risks) (Select from map of CMAs)

## Plan and Prepare

- Install the Red Cross Get Prepared Smart phone app and follow the steps or complete the Australian Red Cross RediPlan booklet at [redcross.org.au/prepare](https://redcross.org.au/prepare)
- Keep a emergency kit – with enough for 3 days in an emergency.
- Food, water, protective gloves, masks, medications and prescriptions, first aid and personal hygiene items, a waterproof torch, toilet paper, chargers, battery powered radio, batteries, reading glasses, essentials for babies and pets, spare clothing, and comfort items, especially for children and people with a disability.
- COVID-Normal\* - Don't forget sanitiser, soap and face coverings.

## Take action to reduce impacts at your property

- Keep gutters and drains clear of debris, outdoor furniture, toys etc.
- Check your building and contents insurance. What type of flooding does it cover?
- Put your most valuable possessions up high, above possible floodwater height.
- Backup important files and documents to a USB kept elsewhere, or to cloud storage.
- Identify higher ground on your property or further away from the danger area.
- Learn about sandbagging at [ses.vic.gov.au/get-ready](https://ses.vic.gov.au/get-ready)
- Consider buying sand and sandbags at home ahead of time, especially if you live in a flood prone area.

## When a flood emergency happens

- Monitor VicEmergency warnings and information.
- Never drive through floodwater – this is the No.1 killer in floods. It takes just 15cm of floodwater to float a small car.
- Watch what is happening around you and activate your plan.
- **Bag it, block it, lift it, and leave** – see *Plan to stay dry* over page
- Take your emergency kit and identification e.g.. Drivers licence, passport
- If you are impacted, register at the Relief Centre or with your local council, to get the help you need.
- Monitor VicEmergency for when it's safe to return and for Recovery information.



Download the VicEmergency app

Visit: [emergency.vic.gov.au/prepare](https://www.emergency.vic.gov.au/prepare)

Or download the app from:



### Home emergency kit

 Emergency plan	 Radio	 Torch
 Spare batteries	 Documents & records	 First aid kit
 Long life food	 Safe drinking water	 Gloves



**Emergency kit**