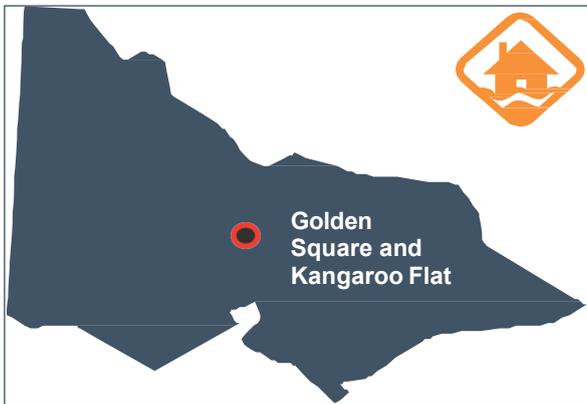




Golden Square and Kangaroo Flat

Local Flood Guide

Flash flood information for the Bendigo Creek at Golden Square and Kangaroo Flat



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





Golden Square and Kangaroo Flat

Bendigo is located in the geographic centre of Victoria, covering almost 3,000 square kilometres, and with a growing population of more than 110,000.

Located near the top of the Bendigo Creek catchment, Golden Square and Kangaroo Flat have a history of flash flooding from heavy rainfall occurring over a short period of time during thunderstorms, causing waterways to overflow into surrounding areas.

Properties most at risk are those that are in or close to low-lying areas along the creeks and gullies throughout Golden Square and Kangaroo Flat.

During storm events, heavy rainfall is dumped into the creeks and drainage systems and then overflows into surrounding areas. A number of things influence the impact of flash flooding including how quickly the rain falls and how wet the ground is before the rain.

Flash flooding can reach full peak in only a few minutes, with no warning.

Did you know?

The Golden Square and Kangaroo Flat area have a history of flooding and is especially prone to flash flooding with recorded floods occurring since settlement in 1850.

- The 1857 flood is one of the largest on record and occurred after 82mm of rain fell in under 24 hours, causing significant flooding along the Bendigo and Back Creeks.
- In November 1933 the Bendigo Creek overflowed its banks at Kangaroo Flat flooding 100 houses in High street and washing away a bridge in Alder Street.
- In 1951, Bendigo received 80.2mm of rain over two days resulting in half a mile of railway line washed away. In Kangaroo Flat the water was waist deep.
- In January 1996 heavy thunderstorms resulted in many shops and residences flooding throughout Kangaroo Flat.
- During March 2010 approximately 80mm was recorded in 3 days with a maximum burst of around 40mm in 2 hours.
- In September 2010 around 80mm of rain fell in 1 day with 40mm over approximately 10 hours.
- The February 2011 flood saw a total of 100mm of rain recorded over 3 days with approximately 50mm in a 5 hour burst.



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

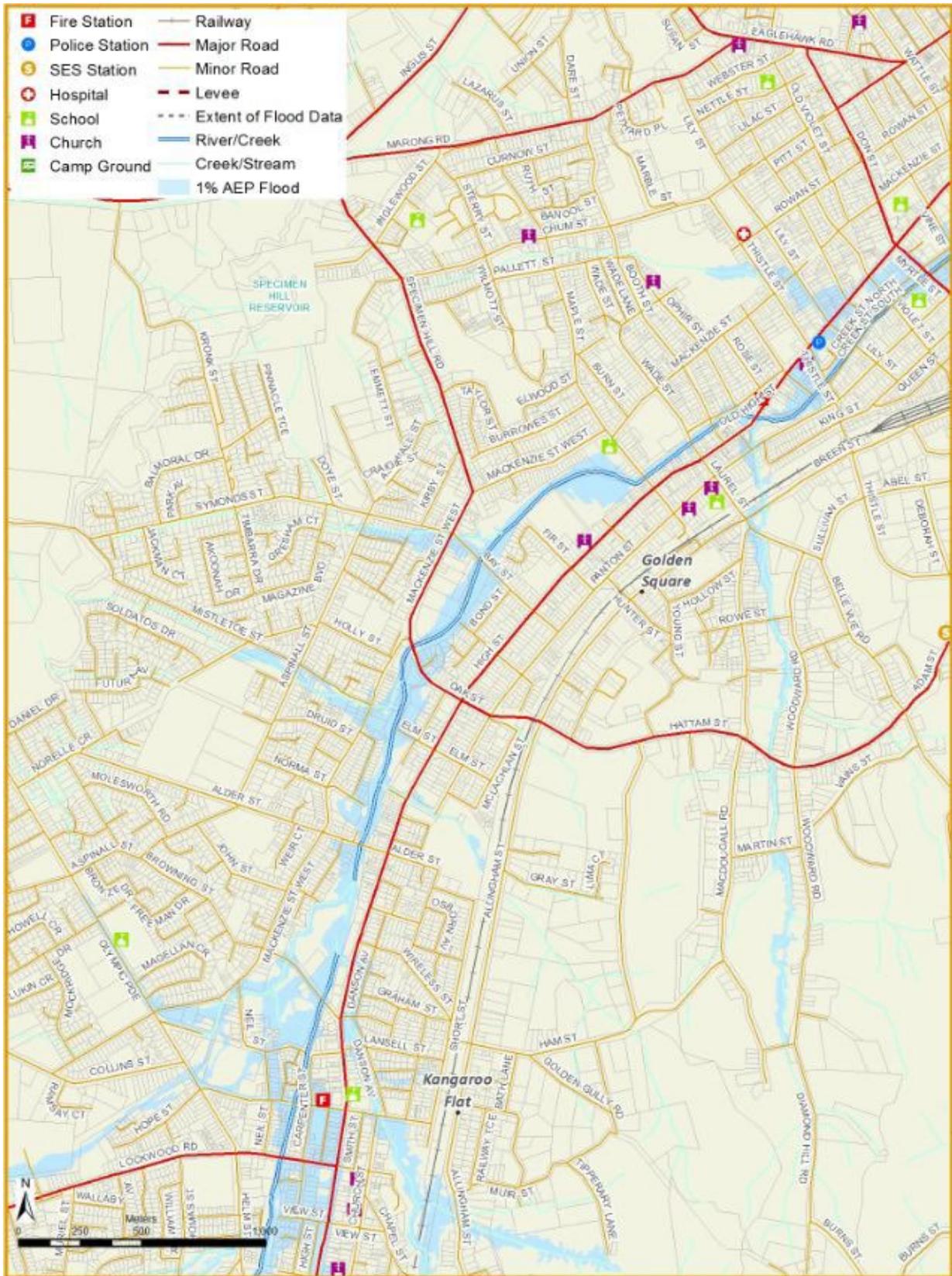
If you live in a low-lying area you may be at risk of flooding or need to detour around flooded areas.

Knowing what to do can save your life and help protect your property.

The maps on the following pages show the potential extent of flooding in a 1% Annual Exceedance Probability (AEP) event. A 1% AEP flood means there is a 1% chance of a flood of this size occurring in any year.



Golden Square



Disclaimer

This map publication is presented by Victoria State Emergency Service for the purpose of disseminating emergency management information. The contents of the information have 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 information is provided by North Central Catchment Management Authority.



Are you at risk of flood?

Many properties in Bendigo are located close to the city's natural waterways and floodplains, leaving a number of properties and people at risk of the effects of flooding from overflows of the waterways.

It is important to assess the risk of flooding around your property to see where runoff water may come from, where it will impact your home, and where the water will go once on your property.

Even if your property isn't close to a waterway it could still be at risk of flooding.

Recent urban development has changed the natural flow of the excess water runoff. It is common for properties in these areas to be flooded from water travelling down streets and driveways.

If you live or work close to a creek, river or low-lying area you may be at risk. Whether you are a household or a business, it is important that you are aware of the risks, be prepared and have your emergency plans ready for when an emergency occurs.

The North Central Catchment Management Authority (NCCMA) in partnership with the City of Greater Bendigo Council has undertaken a flood study for the urban areas of Bendigo. The Bendigo Urban Flood study provides detailed flood information for a range of flood events, assists future land use planning development decisions, and helps authorities and the community to prepare for and respond to flood events.

This was implemented into the Greater Bendigo Planning Scheme, with a Flooding Overlay that is designed to:

- Minimise the effects of overland flows and flooding on new buildings.
- Ensure new developments don't adversely affect existing properties.

NCCMA has developed an online mapping tool called Flood Eye that enables you to obtain a free report that contains flood information specific to your property.

Flood information is useful for:

- Residents/ businesses wanting to understand the risks and prepare for future flood events.
- People looking to buy or rent a property.
- Property owners looking to renovate their house or build an extension.
- Developers looking to subdivide a property.
- Farmers looking to undertake works on their property or develop a whole farm plan.



You can access Flood Eye and further information including details of the Bendigo Urban Flood Study on the NCCMA website at: nccma.vic.gov.au



What you can do:

Know your local environment

If you live in the Golden Square or Kangaroo Flat area, keep an eye on the weather, especially heavy rainfall or sustained rainfall over a number of days.

Knowing your local area and making your own observations are a great way to help you prepare for future floods.

Remember, you may not receive an 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.

During flash flooding

When flash flooding is likely, if you decide to leave, do so **well before** flooding occurs. Leaving early before flooding occurs is always the safest option. You may decide to shelter with neighbours, family or friends in a safer area.

Evacuating through floodwater is very dangerous and you may be swept away. **Never** drive, ride or walk through floodwater.

If you do not leave early enough and become trapped by rising floodwater inside your home or business, stay inside your building and seek the highest part such as a second storey.

Stay there and call Triple Zero (000) if your emergency is life-threatening.

If you are staying in a caravan or temporary dwelling, move to higher ground **before** flooding begins.

Staying Informed and Further Information

- Current warnings (VicEmergency) emergency.vic.gov.au 1800 226 226
- Bureau of Meteorology (BoM) bom.gov.au/vic/warnings 1300 659 217
- VicRoads Traffic traffic.vicroads.vic.gov.au
- Emergency Broadcasters
 - ABC Local 91.1 FM
 - Hit 91.9 FM
 - Triple M 93.5 FM
 - KLFM 96.5 FM
 - Gold 98.3 FM
 - Phoenix FM 106.7 FM
 - Gold 1071 AM
 - SKY NEWS Television
- VICSES Social Media
 - facebook.com/vicses
 - twitter.com/vicsesnews
- Preparing for Flood Emergencies ses.vic.gov.au/get-ready
- Creating an Emergency Plan redcross.org.au/prepare
- North Central Catchment Management Authority nccma.vic.gov.au/ (03) 5448 7124
- City of Greater Bendigo www.bendigo.vic.gov.au (03) 5434 6000

**Life-
threatening
Emergency
000**



Flood warnings and emergency checklist

Bureau of Meteorology Warnings

Warnings are issued by the Bureau of Meteorology (BoM) to tell people about possible flooding.

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.

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.

 A Minor Flood Warning means floodwater can:	 A Moderate Flood Warning means floodwater can:	 A Major Flood Warning 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 and 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 affect some 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).

Severe Thunderstorm Warnings

Thunderstorms are classified as severe when there is potential to cause significant localised damage through wind gusts, large hail, tornadoes or flash flooding. Severe Thunderstorm Warnings are issued to the community by BoM.

Severe Weather Warnings

These warnings are issued to the community by BoM when severe weather is expected that is not directly related to severe thunderstorms or bushfires. Examples of severe weather include damaging winds and flash flooding.

Flash Flooding

- 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 warnings through [VicEmergency](#).



VICSES Warnings

VICSES utilises the VicEmergency app, website and hotline to distribute flood warnings and emergency information in Victoria. Communities can also 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. The warning level is based on severity, conditions and the likelihood that the emergency could impact on the community.

WARNING LEVELS	
	<p>EMERGENCY WARNING</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>WATCH AND ACT</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>ADVICE</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>PREPARE TO EVACUATE/ EVACUATE IMMEDIATELY</p> <p>An evacuation is recommended or procedures are in place to evacuate.</p>

ADDITIONAL MESSAGES	
	<p>COMMUNITY INFORMATION</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>EMERGENCY ALERT</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 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

Visit [Emergency Toolkit](#) for more information



Every home and business should have a basic emergency kit with supplies for 3 days:



Check your kit often. Make sure things work. Replace out of date items.

When a warning is issued, have ready for use or pack into your kit:

I need to add:

Write your list here. Tick items as you pack them into your kit.

Special needs (e.g. babies, elderly and people with a disability)	
Photos	
Family keepsakes	
Valuables	
Other	



Emergency Checklist

- Check if your insurance policy covers flooding.
- Keep this list of emergency numbers in your mobile phone.
- Download the Vic Emergency app on your mobile phone.
- Put together an emergency kit and prepare a Home or Business Emergency plan, see <https://www.redcross.org.au/prepare>



Before Flooding

- Leaving early before flooding occurs is always the safest option. Evacuating through floodwater is very dangerous and you may be swept away.
- Stay informed- monitor weather warnings, forecasts and river levels at the <http://www.bom.gov.au> and warnings through www.emergency.vic.gov.au
- Secure objects likely to float and cause damage.
- Listen to the radio and check the VICSES website for information and advice.
- Go over your emergency plan. Pack clothing and other extra items into your emergency kit and take this with you if you evacuate.

During Flooding

- Make sure your family members and neighbours are aware of what is happening.
- Conditions change rapidly; roads and escape routes can be covered or blocked.
- Put household valuables and electrical items as high as possible.
- Turn off water, gas and electricity at the mains.
- If you are staying in a caravan, move to higher ground before flooding begins.
- Seek shelter indoors, away from floodwater.
- If floodwater comes inside, move to a higher point such as a kitchen bench or second storey.
- Stay away from trees, drains, low-lying areas, creeks, canals, culverts and floodwater.

Evacuating in Flooding

- Flood water is dangerous. Never enter floodwater. It can take just 15cm of water to float a car.
- Find alternative travel routes if roads or underpasses are flooded.
- Be aware of driving hazards, such as mud, debris, damaged roads and fallen trees. If driving conditions are dangerous, safely pull over away from trees, drains and floodwater.

After Flooding

- For recovery information, contact your local council, go to the VicEmergency Relief and Recovery-emergency.vic.gov.au/Relief page or call the VicEmergency Hotline (1800 226 226).
- Have all electrical and gas equipment professionally tested before use.
- Stay away from damaged and flooded buildings, fallen trees and powerlines and damaged roads until authorities advise it is safe to do so.
- Drive slowly, obey all road signs and never drive through floodwater.
- When cleaning, protect your health and safety. Wear strong boots, gloves and protective clothing and wash your hands and clothes regularly.

For VICSES emergency assistance,
call **132 500**, or **Triple Zero (000)**
in life threatening emergencies.