



Ballarat Central Business District Local Flood Guide

Flood information for Gnarr Creek and Yarrowee River in Ballarat Central Business District



Lydiard Street, December 1991 (source: Ian Wilson)



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





Ballarat Central Business District

Much of the Ballarat CBD is open to flash flooding from Gnarr Creek and the Yarrowee River. The area covered by this guide lies between Humffray Street (to the east,) Dawson and Yullie Streets (to the west,) Market and Mair Streets (to the north) and Dana and Eastwood Streets (to the south).

Gnarr Creek flows through Ballarat North and enters channels under the ground from near the Creswick Road roundabout through to where it joins Yarrowee River near Grenville Street. The map below shows possible flooding if the rainfall of the December 1991 flood were to happen today.

Are you at risk of flooding?

Flooding in Ballarat CBD is usually caused by very heavy rainfall from local thunderstorms. The floodwater rises and falls quickly so you may not receive any warning (so it is called flash flooding). Flash flooding can turn into fast water running down streets and footpaths posing a serious risk to people on foot, mainly children.



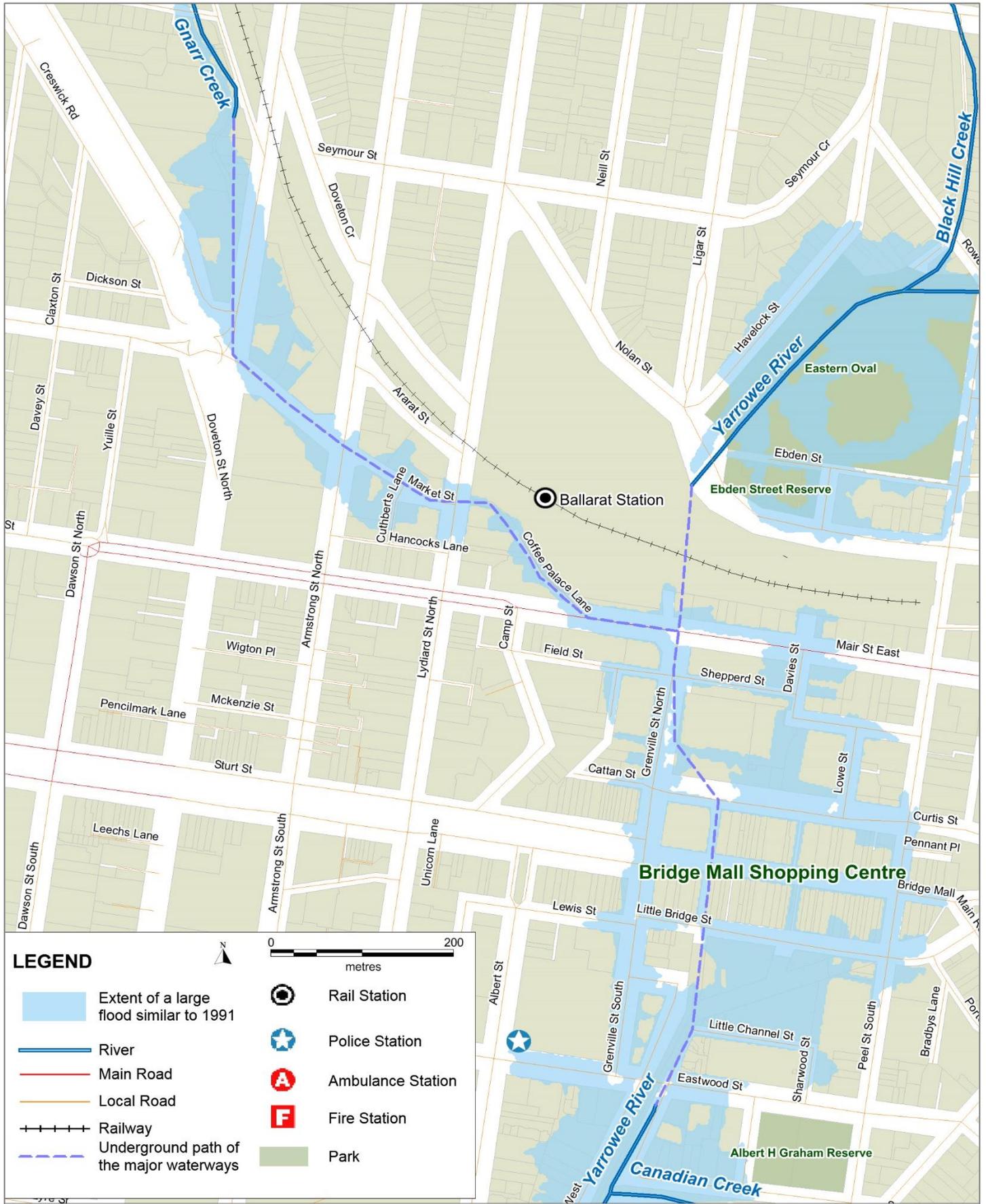
Flooding from Gnarr Creek is the major flood risk to the Ballarat CBD. During heavy rain Gnarr Creek can become full and overflow near Doveton Street. The water then flows down Market, Mair and Grenville Streets before reaching and flooding Bridge Mall. The Creek rises very quickly during major storms and can take as little as two hours to reach highest levels.

The flood risk threat from Yarrowee River has been largely reduced by the building of the Western Freeway Bypass. The Bypass offers protection by holding back water gushes down the Yarrowee River. Flood basins have also been built in the area which sends water down the Gnarr Creek.

These major drainage works carried out since 1991 have improved drainage; however a high risk of flash flooding in the CBD remains.



Flooding in Ballarat impacted buildings during the 2017 flood event (source: The Courier)



Disclaimer: this map 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. Flood risk information is provided by Corangamite Catchment Management Authority.



Did you know?

The CBD has a history of flash flooding, with large flash floods recorded nine times in the 1800's and in 1909, 1933, 1988, 1990, 1991 and 2011.

The December 1991 flood was one of the most severe flood events in living memory. It happened after 76 mm of rain fell in just 2 hours. The effects of this flood were;

- Businesses in Doveton Street North, Market Street, Lydiard Street, Mair Street and Bridge Mall area had water above flood level
- Water Houses and yards in Doveton Street North were severely flooded
- Doveton, Market, Lydiard, Mair, Grenville, Eastwood, Curtis and Peel Streets closed
- Cost of \$24 million to the businesses alone



Flooding in Ballarat impacted buildings during the 2017 flood event (source: The Courier)



Ballarat Aerodrome Rainfall Gauge

While no two floods are the same, the below table shows possible impacts of flooding in Ballarat CBD. These impacts are based on rainfall at the Ballarat Aerodrome Rainfall Gauge over six or twelve hours. You can view rainfall data for Ballarat Aerodrome by searching "Ballarat Aerodrome Rainfall" in your search engine.

Remember: that the actual rainfall in the CBD may be quite different than recorded at the Ballarat Aerodrome given it is over 10 kilometres away from the CBD.

The table below shows how much rain could cause flooding in the area. The effects of rainfall can vary due to a few factors including how wet or saturated the ground already is and how quickly the rainfalls.

Sandbag Collection Point



A Sandbag Collection Point may be opened at the Ballarat VICSES Unit, 115B Gillies Street, Alfredton if there is potential for flooding in the area.

Residents can call in to fill and collect up to 25 sandbags per household to protect your home.

City of Ballarat will promote when this collection point is opened through local radio, newspaper and other media.

Rainfall (mm)	Flood Impact
76mm in 2 hours	1991 flood event, flood extent shown on the page 2 Map. The largest flood for Gnarr Creek. Already wet/saturated ground. A significant number of buildings were impacted in Lydiard Street and Bridge Mall areas. Access may be cut to most roads (greater than 0.5m), including Main Road, Bridge Mall, Lydiard Street and Doveton Street.
118mm in 12 hours	Major Rainfall level
148mm in 48 hours	1933 flood event Yarrowee River flooded. White Horse Bridge across the Yarrowee River was ruined.
100mm in 48 hours	1988 flood event the Gnarr Creek flooded. Buildings affected in Creswick Road, Lydiard Street North, Mair and Curtis Streets.
100mm in 72 hours	1990 – in 72 hours Flash flooding affecting the CBD.
84mm in 12 hours	Moderate Rainfall level
71mm in 12 hours	More extensive flooding may impact the Ballarat Bowling Club and the Ballarat Croquet Club next to the Eastern Oval. Minor flooding map impact Steinfeld Street.
62mm in 12 hours	Minor Rainfall level
100mm in 3 days	1909 flood, Yarrowee River flooded but most damage done by the storm
31mm in 12 hours	2011 flood event, during the storm the businesses in Mair Street and Bridge Mall effected by flooding and storm damage. Flooding may cut access to Havelock and Anderson Streets.



Ballarat Eastern Oval, 2016 flood event (source: The Courier)

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 107.9 FM
 - 3BA 102.3 FM
 - Power 103.1 FM
 - ABC 774 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
- Catchment Management Authority ccma.vic.gov.au/ (03) 5232 9100
- City of Ballarat Council www.ballarat.vic.gov.au/ (03) 5320 5500

**Life-threatening
Emergency
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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. You can also access this information through our 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 of community impact.

WARNING LEVELS

	EMERGENCY WARNING You are in imminent danger and need to take action immediately. You will be impacted. A Major flood warning usually fits into this category.
	WARNING (WATCH AND ACT) 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.
	ADVICE An incident is occurring or has occurred in the area. Access information and monitor conditions. Can also be used as a notification that activity in the area has subsided and is no longer a danger to you. A Minor flood warning or Flood Watch usually fits into this category.

ADDITIONAL MESSAGES

	PREPARE TO EVACUATE/ EVACUATE NOW An evacuation is recommended or procedures are in place to evacuate.
	COMMUNITY INFORMATION Updates for communities affected by an emergency. Can also be used as a notification that an incident has occurred but there is no threat to community.
	EMERGENCY ALERT During some emergencies, communities may be alerted by the sounding of a local siren, or by sending an SMS to mobile phones or a voice message to landlines.

Your emergency plan

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

Taking the time to think about emergencies and make your own plan helps you think clearly and have more control to 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 a supply of 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 (eg, babies, Elderly)
- | 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 [redcross.org.au/prepare](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 [bom.vic.gov.au](https://www.bom.vic.gov.au) and warnings through [emergency.vic.gov.au](https://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.
- If you are staying in a caravan, move to higher ground before flooding begins.

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.
- 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. Stay safe by never entering flood water. 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](https://www.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. 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.

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