Nillumbik Shire

Flood and Storm Sub-Plan

A Sub-plan of the Municipal Emergency Management Plan

Nillumbik Municipal Emergency Management Planning Committee

Version 9.0

Reviewed January 2026

Acknowledgement of Traditional Owners

The Nillumbik Shire Municipal Emergency Management Planning Committee respectfully acknowledges the Wurundjeri Woi-wurrung as the Traditional Owners of the land and waters of Nillumbik Shire. We pay our respects to Elders past, present and emerging, and are committed to working with Aboriginal and Torres Strait Islander communities to achieve a shared vision of safer and more resilient communities.

Authority

The Flood and Storm Sub-plan has been prepared by VICSES on behalf of, and in collaboration with the Nillumbik Shire Municipal Emergency Management Planning Committee (MEMPC). It was prepared in accordance with, and complies with the requirements of the *Emergency Management Act 2013* including having regard to the guidelines issued under section 77, ***Guidelines for Preparing State, Regional and Municipal Emergency Management Plans*** ***(the Guidelines)***.

It was endorsed by the Nillumbik Shire Municipal Emergency Management Planning Committee on 19/06/2026 { as a sub-plan to the Nillumbik Shire Municipal Emergency Management Plan (MEMP). A Statement of Assurance for this plan was approved by the North West Metro Emergency Management Planning Committee on 04/08/2026

This sub-plan was published on the VICSES website on November 2026.

Any printed hard copies of this Flood and Storm Sub-plan are considered 'uncontrolled documents' and may not reflect the most current or updated version.

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1. INTRODUCTION

1.1. Aim

The aim of this Municipal Emergency Management Plan (MEMP) Flood and Storm Sub-plan (MFSSP or the 'Sub-plan') is to detail the local arrangements for before, during and after flood and storm incidents within the Nillumbik Shire municipal footprint.

1.2. Objectives

The objectives of this Sub-plan are to:

- Ensure alignment with the State Emergency Management Planning Framework and integration with broader emergency management arrangements and supporting documentation.
- Recognise and summarise the flood and storm risks that may affect people, property, and/or the environment within the municipal area, drawing on existing risk assessments and studies.
- Support the implementation of measures that avoid or minimise future risks and reduce existing vulnerabilities, taking into account the causes and consequences of flood and storm events.
- Manage residual risks by promoting access to accurate, timely and locally relevant information to reduce the consequences of flood and storm incidents.

1.3. Authorising environment

This is an updated version of this Nillumbik Shire MEMP Flood and Storm Sub-plan (MFSSP). It replaces and supersedes the Nillumbik Shire MEMP Flood and Storm Sub-plan August 2023.

This MFSSP is a Sub-plan to the Nillumbik Shire Municipal Emergency Management Plan (MEMP). It is consistent with the SEMP and in alignment with the core capabilities of the Victorian Preparedness Framework.

Comments and feedback on this Sub-plan are welcome and should be sent to: ust.nwmetro@ses.vic.gov.au

The Nillumbik Shire MEMPC is the owner of this MEMP Flood and Storm Sub-plan (MFSSP), pursuant to *Part 6A of the Emergency Management Act 2013* (as amended).

To the extent possible, this Sub-plan does not conflict with, or duplicate, any other plans in relation to emergency management that are currently in force within Australia as per the *Emergency Management Act 2013 60AC(c).*

Section 60AI (2) of the Emergency Management Act 2013 allows the MEMPC and Emergency Management Victoria to exclude information that is related to critical infrastructure, personal information or information that is of a commercially sensitive nature.

In accordance with its roles and responsibilities set out in the State Emergency Management Plan (SEMP), the Victoria State Emergency Service (VICSES) has prepared this plan in collaboration with the MEMPC. It takes into account the outcomes of the Community Emergency Risk Assessment (CERA) process undertaken by the MEMPC.

Engagement with communities through the update of this Sub-plan has primarily taken place through the Nillumbik Municipal Flood Plan Working Group (MFPWG), along with input from community representatives serving on the MEMPC.

Membership of the Flood and Storm Planning Committee (MFSPC) comprises of the following representatives from the following agencies and organisations:

- VICSES Operations Officer Emergency Management
- VICSES Nillumbik Unit Controller
- Nillumbik Shire (Municipal Emergency Management Officer)
- Victoria Police (Municipal Emergency Response Coordinator)
- Melbourne Water
- Department of Families, Fairness and Housing (DFFH)
- Fire Rescue Victoria (FRV)
- Emergency Management Victoria (EMV)

1.4. Exercise, evaluation and review

This Sub-plan will be reviewed and updated at least every three years, with consideration given to earlier revisions as required to ensure the Sub-plan provides for a current, integrated, coordinated, and comprehensive approach to flood emergencies, and consideration of potential escalation of climate-related hazards.

Earlier reviews may be triggered by this Sub-plan being applied in a major emergency or exercise or following a flood study, a significant change in flood mitigation measures, a substantial change to relevant legislation or arrangements, including the SEMP.

1.4.1. Exercise

The MEMPC is responsible for organising exercises to test this plan, which should be conducted within the Sub-plan's lifecycle. Ideally, these exercises will be scheduled shortly before the period of highest risk for floods and storms, typically during winter and spring.

This Flood and Storm Sub-plan will be tested as part of the future flood and/or storm events and lessons from these events will be embedded into this Sub-plan.

Exercises that Nillumbik Shire Council has recently participated in are listed in the MEMP (Section 3 Resource sharing/cross boundary events, page 21).

Event	Exercise Type	Date
Storm Events - 2023	Activation of Regional operations Centre (ROC) @ Sunshine Incident Control Centre	08/07, 11/12, 26/12
Storm Events – 2024	Activation of ROC	03/01, 01/03, 27 & 28/08
Storm Events - 2025	Activation of ROC	01/12, 23/02, 26/05, 22/10

1.5. Audience and linkages

1.5.1. Audience

The audience of this Sub-plan is local government and agencies within the emergency management sector in Nillumbik Shire, including business and community groups who hold a significant role in the management of the flood and storm emergencies. Although the wider community is not the primary audience, community members may find the contents of this plan informative.

1.5.2. Linkages

This Sub-plan does not operate in isolation and is integrated within the broader emergency management planning framework, which guides flood and storm management at the State, Regional, Municipal and Local level.

This Sub-plan refers to a range of existing resources relating to floods and storms and accords with the direction set through related plans and policies and provides links to where the reader can obtain further information.

Readers may require a login to access operational or sensitive information, such as for documents saved on the Emergency Management Common Operating Picture (EM-COP), including Joint Standard Operating Procedures (JSOPs) or information saved on VICSES Intranet, including Standard Operating Procedure (SOPs). These can be obtained by contacting a VICSES Officer as required.

The sub-plan is consistent with and subordinate to:

- State Emergency Management Plan (SEMP).
- SEMP Flood Sub-plan, SEMP Storm Sub-plan.
- The North West Metro Region Emergency Management Plan.
- The North West Metro Region Flood Sub-plan, Storm Sub-plan.
- Nillumbik Shire Municipal Emergency Management Plan (MEMP)
- Community Local Flood Guides (LFGs): Nillumbik Shire LFG is under development.

1.5.3. Supporting Operational Information

The following documents support and supplement this Sub-plan. The Annexes listed below contain restricted operational or sensitive information and can be obtained through a VICSES representative as required:

Restricted Document(s)
Flood Intelligence and VICSES Response Arrangements for Flood and Storm in the Nillumbik Shire
▪ Annex A – Flood and Storm Threats for Municipality
▪ Annex A1 – Flood evacuation arrangements (if applicable)
▪ Annex B – Typical flood peak travel times
▪ Annex C – Localities and At-Risk Communities
▪ Annex D – Maps and Schematics
▪ Annex E – Storm Damage and Specific Response Arrangements
▪ Annex F – Flood and Storm Warning Systems

1.5.4. Hyperlinks

Documents or resources that are referred to frequently throughout this plan (such as the SEMP) may not be hyperlinked in each instance.

All hyperlinks were accurate at time of publication and currency of the linked content remains the responsibility of the host agency.

2. THE EMERGENCY CONTEXT

2.1. Risks

Nillumbik is located less than 25km north-east of Melbourne, and has the Yarra River as its southern boundary. The Shire extends 29km to Kinglake National Park in the north, stretches approximately 20km from the Plenty River and Yan Yean Road in the west, to Christmas Hills and the Yarra escarpment in the east. Nillumbik covers an area of 432 km^2 and has an estimated population of 62,895 who live in communities which range from typical urban settings to remote bush properties[1].

Major townships within Nillumbik; are Eltham, Diamond Creek & Hurstbridge of which all are located along Diamond Creek (See Map B in Annex D – Operational use only). Hurstbridge is the location of the convergence of the Arthurs and Diamond Creeks.

The Sugarloaf Reservoir, in Christmas Hills is a major source of fresh water for the population of Melbourne and has a capacity of 93,411ML. The reservoir has an outflow which feeds into the Yarra River upstream of Warrandyte.

For more detailed information refer to Annex A in the Flood Intelligence and VICSES Response Arrangements for Flood and Storm in Nillumbik Shire (restricted).

The Community Emergency Risk Assessment (CERA) process has rated the residual risk of both storm and flood in Nillumbik Shire as medium. Please refer to the MEMP (Section 4 Mitigation, page 23) for more detailed information on risk identification and assessment in Nillumbik Shire.

2.1.1. Riverine flooding

Within the municipality, large severe floods generally occur as a result of a moist warm airflow from northern Australia bringing moderate to heavy rainfall over a period of 12 hours or more following a prolonged period of general rainfall. The period of general rainfall “wets up” the catchments and (partially) fills both the on-stream dams and the natural floodplain storage. These combine to increase the runoff generated during the subsequent period of heavy rainfall.

Large but less severe floods result from sequences of cold fronts during winter and spring that progressively wet up the catchments and fill the on-stream dams and the natural floodplain storage. Prolonged moderate to heavy rain leads to major flooding.

2.1.2. Flash flooding

Short Duration, high intensity rainfall (usually associated with thunderstorms) can also cause localised flooding within the municipality, along overland flow paths when the local urban drainage system surcharges. Such events, which are mainly confined to the summer months, do not generally create widespread flooding since they only last for a short time and affect limited areas. Flooding from these storms occurs with little warning and localised damage can be severe.

High intensity rainfall such as associated with thunderstorms giving average rainfall rates of more than 20mm/hour for an hour or more is likely to lead to flash flooding and / or overland flows, across the urbanised parts of the municipality.

Blocked or capacity impaired stormwater drains can also lead to overland flows and associated flooding: the drain surcharges and excess water flows above ground.

2.1.3. Severe weather and storms

Severe thunderstorms and associated extreme weather conditions, such as tornadoes or microbursts, can have significant impacts on the community, built environment and essential services. While severe thunderstorms may affect large areas, tornadoes and microbursts in Victoria are typically highly localised, often impacting only one or two suburbs. Despite their limited geographic footprint, these events can cause intense and concentrated damage.

Typical consequences of severe storm events include:

- Wind damage to residential and commercial buildings
- Uprooted or fallen trees causing property damage and blocking roadways
- Localised flash flooding
- Large Hail
- Road damage and temporary road closures
- Power outages
- Disruption to telecommunications services
- Impacts on critical infrastructure (e.g. health, water, energy, transport)
- Entrapment of people in homes or vehicles due to fallen trees or floodwater
- Epidemic Thunderstorm Asthma (ETSA)

2.2. History of Municipal Flood and Storm emergencies

The MEMP details a brief history of all major emergencies that has happened within the municipality.

Significant floods (with high flood gauge levels and likely flooding consequences to property and infrastructure) to have occurred within Nillumbik are as follows in the table below. Levels and rain totals in black indicate large-scale impacts to surrounding areas were recorded, whereas grey figures indicate localised impacts if any occurred. To view the locations of a selection of these severe weather events, see mapping in Annex D (restricted).

Event	Plenty River at Greensb'ugh (229615A)	Arthurs Creek at Arthurs Creek (229620A)		Arthurs Creek at Nutfield (229272A)	Diamond Creek at Hurstbridge (229619B)		Diamond Creek at Eltham (229618A)	Watsons Creek at Kangaroo Ground (229608A)	Yarra River at Warrandyte (229200B)
	River Level	Rainfall at Gauge	Creek Level	Creek Level	Rainfall at Gauge	Creek Level	Creek Level	Creek Level	River Level
Normal Water Level	0.1m		1.20m	0.2m		0.2m	0.5m	0.5m	0.7m
Minor Flood Class	-		-			5.5m	6.0m	-	3.0m
Moderate Flood Class	-		-			6.4m	7.0m	-	4.5m
Major Flood Class	-		-			7.0m	7.5m	-	6.5m
9th November 1971	-	-	-	-	-	-	-	-	**6.78m**
15th May 1974	**7.77m**	-	4.32m	-	-	-	-	-	3.77m
31st July 1977	-	-	-	-	-	-	-	-	3.52m
18th September 1984	1.73m	54mm / 48hrs	3.67m	-	-	-	6.12m	4.42m	4.39m
22nd December 1985	1.92m	40mm / 8hrs	3.49m	-	-	-	6.08m	4.36m	1.96m
29th July 1987	5.40m	64mm / 28hrs	3.74m	-	-	-	5.96m	4.12m	3.13m
11th June 1989	4.84m	83mm / 43hrs	4.24m	-	-	-	**7.20m**	-	3.11m
18th September 1991	0.86m	37mm / 43hrs	3.07m	-	-	-	4.16m	3.55m	3.33m
10th October 1992	1.78m	23mm / 5hrs	3.42m	-	-	-	5.64m	4.27m	3.55m
30th July 1996	2.30m	27mm / 27hrs	3.34m	-	-	-	4.24m	1.39m	4.29m
13th November 2004	2.70m	62mm / 35hrs	2.13m	4.36m	-	-	5.81m	4.44m	3.42m
3rd February 2005	4.44m	134mm / 25hrs	-	**5.64m**	-	-	6.97m	4.74m	2.73m
30th October 2010	2.43m	58mm / 17hrs	3.98m	4.65m	53mm / 17hrs	5.32m	5.49m	3.60m	2.17m

14th January 2011	1.66m	56mm / 27hrs	3.87m	4.34m	75mm / 27hrs	4.15m	3.95m	2.22m	1.60m
5th February 2011	3.82m	73mm / 16hrs	4.21m	5.27m	98mm / 16hrs	**6.03m**	6.12m	**4.92m**	3.60m
26th November 2011	3.60m	78mm / 22hrs	4.04m	4.71m	58mm / 22hrs	5.01m	5.07m	3.32m	1.99m

Event	Plenty River at Greensb'ugh (229615A)	Arthurs Creek at Arthurs Creek (229620A)		Arthurs Creek at Nutfield (229272A)	Diamond Creek at Hurstbridge (229619B)		Diamond Creek at Eltham (229618A)	Watsons Creek at Kangaroo Ground (229608A)	Yarra River at Warrandyte (229200B)
	River Level	Rainfall at Gauge	Creek Level	Creek Level	Rainfall at Gauge	Creek Level	Creek Level	Creek Level	River Level
Normal Water Level	0.1m		1.20m	0.2m		0.2m	0.5m	0.5m	0.7m
Minor Flood Class	-		-			5.5m	6.0m	-	3.0m
Moderate Flood Class	-		-			6.4m	7.0m	-	4.5m
Major Flood Class	-		-			7.0m	7.5m	-	6.5m
25th December 2011	2.45m	53mm / 20hrs	2.58m	2.42m	67mm / 19hrs	4.16m	5.48m	3.39m	1.87m
29th December 2016	2.65m	18mm / 2hrs	1.30m	0.22m	24mm / 2hrs	0.31m	3.46m	0.39m	0.80m
3rd December 2017	0.92m	75mm / 41hrs	4.60m	3.76m	85mm / 48hrs	4.15m	3.79m	3.01m	1.71m
10th June 2021	1.16m	32mm / 11hrs	3.70m	3.66m	29mm / 12hrs	3.60m	2.98m	0.56m	3.18m
14th October 2022	4.89m	28mm / 5hrs	**5.37m**	4.97m	29mm / 6hrs	6.00m	6.23m	4.18m	2.87m
27th October 2022	2.02m	23mm / 7hrs	3.85m	4.05m	19mm / 6hrs	4.90m	5.07m	4.55m	4.19m

Table A2 – Selection of Historical Flood Events along the major waterways within Nillumbik

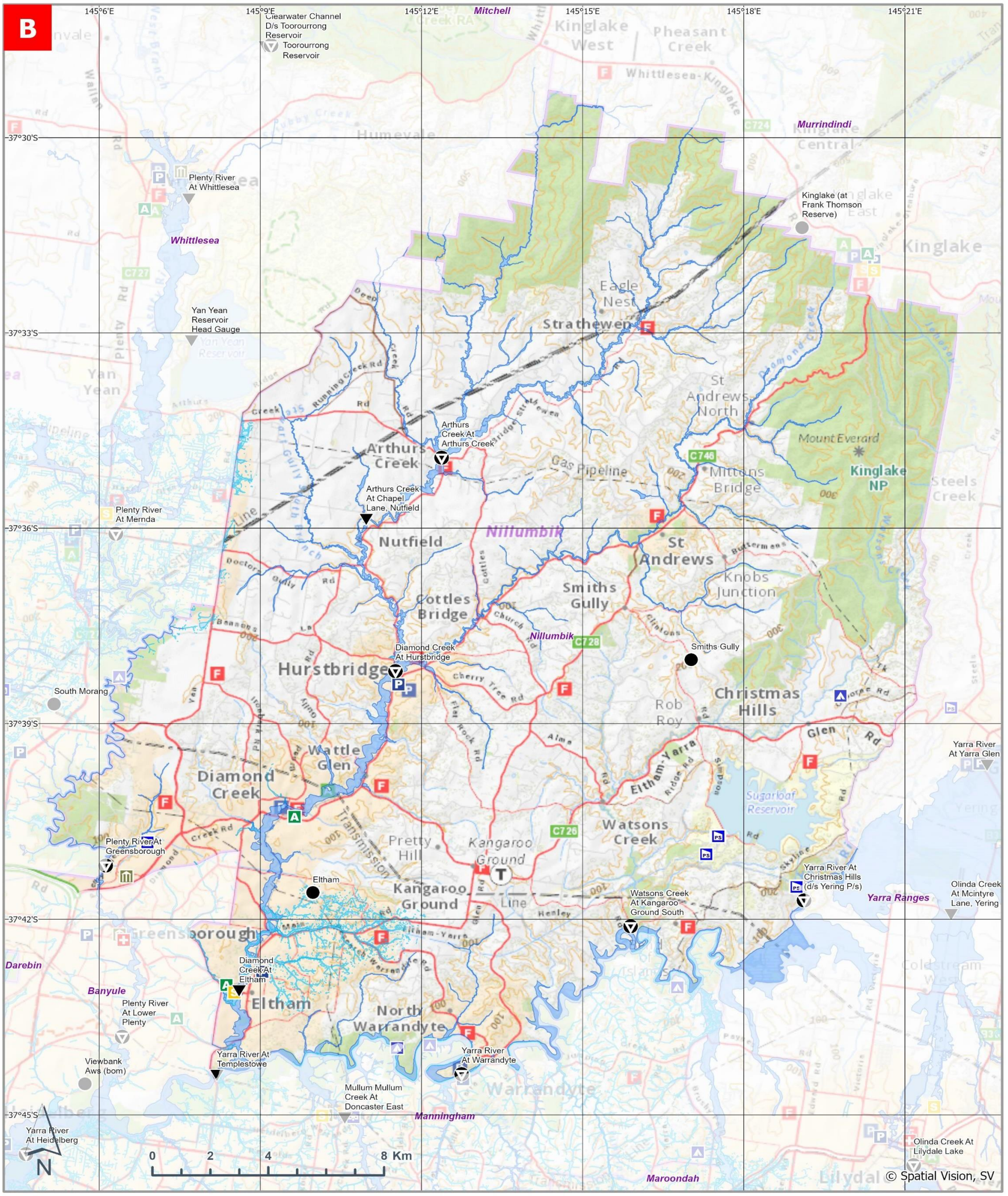
Significant flooding within the Nillumbik occurred on Christmas Day 2011. The rainfall intensity of these storms where recorded at a less than 1% AEP event (greater than 100 year ARI) at three rainfall gauging locations (Warrandyte, Hurstbridge & Greensborough) and a 1.5% ARI event at Arthurs Creek[2]

2.3. Dam spilling/failure

The Department of Energy, Environment and Climate Action (DEECA) is the control agency for dam safety incidents. This includes breach, failure or potential breach/failure of a dam. However, VICSES is the control agency for any resultant flooding.

DEECA has developed Dam Safety Response Plan to assist DEECA in managing its obligations associated with dam safety incidents.

For the list of major dams with potential to cause structural and community damage within the municipality refer to **Annex A** in the Flood Intelligence and VICSES Response Arrangements for Flood and Storm in Nillumbik Shire (restricted).



Map produced by VICSES September 2022.

SHIRE OF NILLUMBIK

1% AEP (100yr ARI) Flooding

B. Municipal Flood Map
(1% AEP (100yr ARI) Extent)

- Stream Level & Rain Gauge
- Stream Level Gauge
- Rain Gauge
- Hospitals
- Fire Station
- VICSES Units
- Ambulance Stations
- Police Stations
- Municipal Office
- Municipal Depot
- Caravan Park
- Camp Ground
- WS Pumping Station
- Waterway
- Melbourne Water Retarding Basin
- 1% AEP Flash Flood Extent
- 1% AEP Riverine Flood Extent

LAND USE

- Residential
- Commercial and Business
- Industrial
- Public Parks / Cemeteries / Recreation
- Utilities and Local Government Facilities
- Education

SES VICTORIA State Government

Melbourne Water

This map publication is presented by the Victoria State Emergency Service for the purpose of disseminating emergency management information. The contents of the information have not been independently verified by the 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.

3. MANAGING FLOOD AND STORM EMERGENCIES

3.1. State Emergency Management Priorities

The State Emergency Management Priorities that are outlined in the SEMP guide all decisions before, during, and after any emergency, and apply to all aspects of this plan.

3.2. Roles and Responsibilities

An agency that has a role or responsibility under this Sub-plan must act in accordance with the Sub-plan.

There are a few agencies with specific roles that will act in support of VICSES and provide support to the community in the event of a serious storm or flood within the Nillumbik Shire. These agencies will be engaged through the Incident Emergency Management Team (IEMT).

The general roles and responsibilities of supporting agencies are as detailed in the MEMP, SEMP, SEMP Flood Sub-plans and SEMP Storm Sub-plan.

3.3. Mitigation and Preparedness

Various sections throughout the MEMP promote interoperability and integration of emergency management systems, including, but not limited to:

- Outlining response arrangements and the categorisation of emergency events, and how these might change over time (Section 5 Overview of response and relief arrangements, page 28).
- Referring to the SEMP for details regarding the escalation and de-escalation of control, command and coordination (Section 6 Responding to emergencies and incidents in Nillumbik, page 33).
- Escalating relief coordination (Section 7 Escalating relief coordination, page 38) and outlining the processes in the SEMP regarding transition to recovery (Section 8 Transition to recovery, page 41).
- Recognising the importance of supporting community-led recovery (Section 9 Community-led recovery, page 46).

The Nillumbik Shire MEMP also contains information regarding the municipality's existing and future capacity and capability for emergency management (Section 3 Capacity and capability to deal with emergency incidents, page 18).

3.3.1. North West Metro Floodplain Management Strategy

The Victorian Floodplain Management Strategy sets the policy and accountability framework for flood related mitigation activities in Victoria. The Floodplain Management Strategy for Port Phillip and Westernport sets out the implementation of flood mitigation activities for the Region, including for the Nillumbik Municipality.

3.3.2. Flood structural flood mitigation measures

Structural flood mitigation measures are any physical construction to reduce or avoid possible impacts of flood hazards, or the application of engineering techniques or technology to achieve flood hazard resistance and resilience in structures or systems.

For more detailed Flood Intelligence and VICSES Response arrangements surrounding structural flood mitigation measures refer to **Annex C** in the Flood Intelligence and VICSES Response Arrangements for Flood and Storm in Nillumbik Shirerestricted).

3.3.3. Planning scheme controls

Flood mitigation within the municipality is supported through planning scheme controls such as the Land Subject to Inundation Overlay (LSIO), Floodway Overlay (FO), and Special Building Overlay (SBO), which guide development in flood-prone areas. These overlays help manage flood risk by ensuring appropriate building siting, floor levels, and drainage requirements. The planning controls work alongside building regulations and the National Construction Code to support safer, more resilient development across the municipality.

Planning overlays play a critical role in reducing flood risk by mandating floor levels above the predicted flood level, requiring new developments to incorporate adequate drainage measures, and protecting overland flow paths from being obstructed.

Council is proactively applying these planning tools to assess new proposals, regularly updating overlays as new flood modelling becomes available, and advocating for stronger planning provisions across Victoria to further support community resilience.

In addition to guiding new development, planning controls also respond to changes in flood risk identified through updated and improved flood modelling. This modelling can reveal new risks to existing properties. Climate change is expected to further increase flood risk across the municipality, expanding areas subject to inundation and increasing depths for existing at-risk properties.

3.4. Community Resilience

A resilient community is socially connected and has infrastructure that can withstand disaster or shocks and foster community recovery. Resilient communities promote individual and community wellbeing, use of available resources and cohesiveness to strengthen their communities for everyday, as well as extreme challenges.

3.4.1 Flood and Storm specific community engagement and programs

Community education and engagement are essential to building awareness of flood and storm risks and supporting preparedness across the municipality. Relevant programs and resources empower people to make informed decisions and to be equipped, both emotionally and physically, to take appropriate action before, during, and after emergencies.

Flood and storm risks cannot be fully mitigated, and a shared responsibility is vital. VICSES, with the support of the Nillumbik Shire and other agencies, will coordinate and deliver targeted community flood and storm engagement programs by:

- Providing accurate preparedness information through media, publications, and engagement activities
- Facilitating and supporting community programs, events, and targeted initiatives
- Offering technical advice to ensure resources remain accurate and relevant
- Working with schools, businesses, and organisations to strengthen planning and preparedness
- Contributing to exercises, forums, and community engagement opportunities
- Acting as liaisons during events to ensure clear and consistent communication

Community members are encouraged to:

- Understand their flood and storm risk
- Prepare by developing a home emergency plan and emergency kit (see the VICSES website)
- Stay informed and follow emergency services' advice during warnings
- Engage in community programs, events and resources such as Local Flood Guides, targeted initiatives, and Community Emergency Management Plans (CEMPs)
- Participate in emergency planning at facilities such as schools, retirement villages and businesses

Refer to the MEMP for more detailed municipal level community engagement programs.

3.4.2. Public information and warnings for flood and storm emergencies

The SEMP Flood Sub-Plan and the SEMP Storm Sub-Plan detail the arrangements for public information and warnings for flood and storm. VICSES SOP008 Severe Weather Notification and Activation Process and VICSES SOP009 Flood Notification and Activation Process outline in detail the actions that VICSES will undertake upon receipt of a Severe Weather Warning or Flood Watch/Flood Warning from the Bureau of Meteorology.

Details on warnings issued by VICSES through VicEmergency and VICSES channels, including for areas or impacts not covered by a Bureau of Meteorology warning, are outlined in **Annex F** in the Flood and Storm Intelligence and VICSES Response Arrangements for the Nillumbik Shire (restricted).

The Incident Controller (IC), through the Public Information Unit established at the Incident Control Centre (ICC), will manage public information and warnings. If the ICC is not established, the VICSES Regional Duty Officer (RDO) and VICSES Regional Agency Commander (RAC) are responsible for managing all public communication. The Nillumbik Shire will work with the IC/VICSES to assist with the dissemination of public messaging and/or warnings to ensure that consistent and timely messaging occurs.

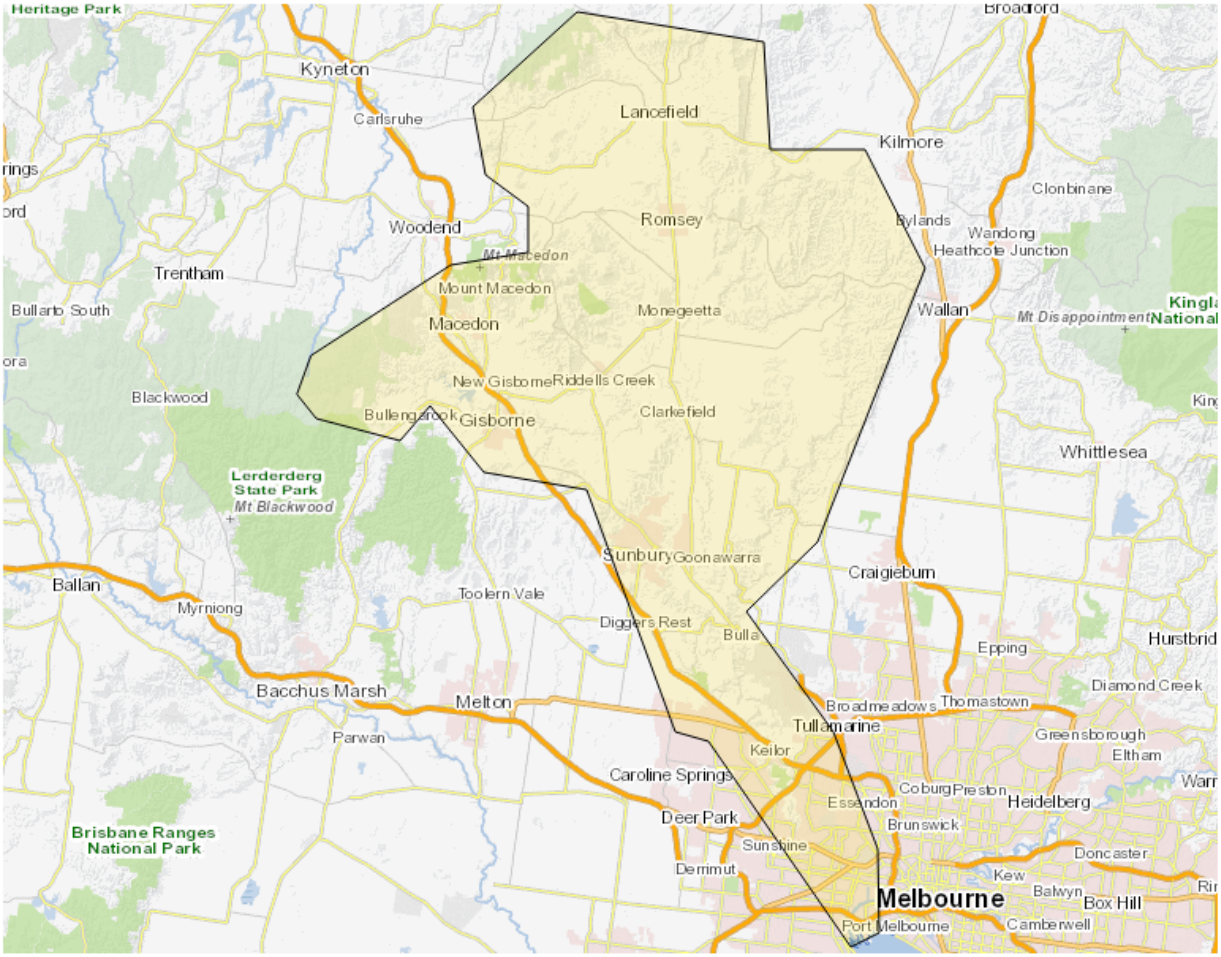
Flood Symbol	Storm Symbol	Warning Level	Meaning	Agency/Community Action
		Advice (yellow)	Flood or storm possible; no immediate danger.	An incident has started. There is no immediate danger. Stay up to date in case the situation changes
		Watch and Act (Orange)	Flooding or severe storm likely; may impact safety and property.	There is a heightened level of threat. Conditions are changing and action is required now to protect community safety.
		Emergency Warning (Red)	Severe flooding or dangerous storm occurring or imminent.	An emergency warning is the highest level of warning. Action needs to be taken immediately, any delays puts life at risk.

3.4.3 BoM Flood Warning Example

ADVICE - FLOOD

Incident Location: Maribyrnong
Incident Name: MaribyrnongFloodSept2016
Issued: Set at publish time
Next Update Expected:

Map



Message

This **Minor Flood Warning** is being issued for Maribyrnong River.

- The Maribyrnong River catchment has received rainfall averaging about 31mm since 0900am yesterday. Rainfall totals of 5mm have been forecast for the catchment in the next 2 hours.
- Water levels of the Maribyrnong River and its tributaries at various locations are rising in response to the rain.
- The level of the Deep Creek at Darraweit Guim is currently 5.41m and rising. It is expected to peak above the Minor Flood Level (5.50m) this morning.
- Minor flooding in the Deep Creek and Maribyrnong River catchment is expected to affect low lying areas adjacent to the waterway. Minor roads may be closed.

The river heights at 08.14am 14/09/2016 were:

- Deep Creek at Doggetts Bridge, Lancefield: 2.22 metres, rising
- Deep Creek at Darraweit Guim: 5.47 metres, falling
- Deep Creek Creek at Konagaderra: 3.62 metres, falling
- Bolinda Creek at Clarkefield: 1.19 metres, rising
- Deep Creek at Bulla: 2.39 metres, falling
- Rosslynne Reservoir, Head Gauge: 38.52 metres, rising
- Jacksons Creek at Sunbury: 2.13 metres, rising
- Steele Creek at Keilor East: 1.19 metres, rising
- Maribyrnong River at Keilor North: 3.58 metres, rising
- Maribyrnong River at Keilor: 1.84 metres, rising
- Maribyrnong River at Maribyrnong: 0.04 metres, rising

Stay informed - monitor your local conditions and remain alert.

What you should do:

- Be prepared to act if your situation changes.
- You should stay informed by listening to emergency broadcasters and monitoring warnings.
- Monitor weather forecasts and river levels. Go to www.bom.gov.au/vic/warnings.
- Floodwater is dangerous - never drive, walk or ride through floodwater.

Impacts in your area:

- Flooding above floor level of a single story home is likely to occur in some locations.
- Local roads may be closed and low bridges may be underwater.
- Areas around rivers and streams may be flooded.

This message was issued by State Emergency Service.

The next update is expected by 4PM this afternoon or as the situation changes.

Flood information:

- For river heights check www.bom.gov.au or phone 1300 659 217.
- For urgent animal welfare issues call Agriculture Victoria on 136 186 or your local vet.

3.4.4 Flood Intelligence

Flood intelligence supports decision making and planning for flooding by providing reliable and accurate information relating to:

- The expected level, depth, and velocity of floodwater and its consequences.
- Determination of actions to be undertaken in response to the identified consequences.

The Department Energy, Environment and Climate Action (DEECA) maintains the FloodZoom flood intelligence platform. Inquiries regarding FloodZoom access should be directed to accounts@floodzoom.vic.gov.au.

For more detailed Flood Intelligence and VICSES Response arrangements refer to Annex C in the Flood Intelligence and VICSES Response Arrangements for Flood and Storm in Nillumbik Shire (restricted).

3.4.5 Cross-border Collaboration and Area of Operations

The area of operations concept is detailed within the SEMP and provides flexibility to managing flood and storm response when it is geographically located across several municipalities where it encourages collaboration between municipalities as part of the Victoria's Emergency Management Planning Framework and the Victorian Preparedness Framework.

Nillumbik Shire is a signatory to the North West Metro Region Collaboration (NWMRC) , the Eastern Metropolitan Councils Emergency Management Partnership (EMCEMP) and the Municipal Association of Victoria (MAV) Protocol for Inter-Council Emergency Resource Sharing. These protocols provide a framework to support coordinated access to resources across councils when local capacity is exceeded during flood or storm events.

3.5. Local Knowledge

As the control agency for flood and storm in Victoria, VICSES is committed to ensuring the incorporation of local knowledge in decision making before, during and after incidents. This is guided by the VICSES policy 10.02 Local Knowledge (VICSES access only).

Local knowledge is a critical element of planning. The community and other organisations can provide valuable local information about hazards, incidents and how they may evolve. This information is commonly referred to as local knowledge. This plan aims to ensure that planners and responders capture appropriate local knowledge before, during and after incidents.

As an incident escalates from local control to a larger incident management structure, it is essential that local knowledge capability is retained within the overall structure. This should include how local subject matter experts are embedded into divisional and sector command structures.

There are no formal Community Flood Observer Programs within the municipality, however local knowledge has been incorporated into this plan through consultation with local response agencies.

Local Knowledge should also include an understanding of cross-boundary impacts and shared resource demands between neighbouring municipalities, particularly where flood risk complexities may influence operational response and recovery activities.

3.5.1. Field Observers

Field Observers provide local knowledge to VICSES and the Incident Control Centre regarding local insights and the potential impacts and consequences of an incident and may assist with the dissemination of information to community members.

VICSES have trained Field Observers who can be deployed to gather intelligence in areas impacted by both flood and storm events. To support intelligence gathering during flood and storm operations, drone support can be provided by other agencies, with requests facilitated through the VICSES SAC and SCC Air Desk

VICSES SOP073 outlines the role of the Field Observer and process for their activation which is via the VICSES RDO.

3.6. Response (including relief)

3.6.1. Activation of Response

VICSES may be notified of flood and storm incidents through several sources, but the most common source is calls received via 132 500 or if the emergency is life threatening, Triple Zero (000). Other sources are via other emergency management agencies and local government. In most cases, these events are of a small scale (a level 1 incident), which local VICSES units manage without significant outside support.

In the case of more significant level 2 (regional level) or level 3 (an incident that has high complexity and may have statewide implications) Flood and storm response arrangements may be activated by the RDO VICSES North West Metro Region or RAC.

The VICSES IC/RDO/RAC will activate agencies as required as documented in the SEMP Flood Sub-plan or SEMP Storm Sub-plan.

3.7. Concept of Operations

The SEMP defines the responsibilities of the Incident Controller (IC), Incident Control Centre (ICC), Incident Management Team (IMT) and Incident Emergency Management Team (IEMT).

3.7.1. Control

Sections 5(1)(b) and 5(1)(c) of the Victoria State Emergency Service Act 2005 detail the authority for VICSES to respond to storms and floods.

The Role Statement within the SEMP identifies VICSES in its response functions as the Control Agency for flood and storm. It identifies DEECA as the Control Agency responsible for dam safety as well as reticulated water and wastewater (sewerage) service.

All flood and storm response activities within the Nillumbik Shire including those arising from a dam failure or retarding basin / levee bank failure incident will therefore be under the control of the appointed Incident Controller, or delegated representative.

3.7.2. Incident Control Centre (ICC)

The ICC may be activated in advance based on the severity of warnings and in accordance with VICSES readiness arrangements:

- VICSES readiness and activation levels – flood.
- VICSES readiness and activation levels – severe weather.

3.7.3. Escalation

Resourcing and event escalation arrangements are described in the SEMP.

3.8. Considerations for operating with other agencies and stakeholders

As other agencies are deployed to assist the IC should consider the following actions:

- Establish a communications plan to enable the tasking of other agency resources which should be included in briefings.
- Embedding and determining an agreed response to downed powerlines as this is often a predominant hazard for storm events.
- Ensuring other agency personnel who are undertaking the Emergency Management Liaison Officer (EMLO) roles have access to EM-COP.
- Preparing a briefing to support in-coming other agency resources to identify:
    - staging area location and any safety issues with accessing it (closed roads/powerlines down)
    - resources available such as re-supply of consumables (tarps/sandbags)
    - welfare arrangements
    - duty time limitations (these should be consistent with VICSES SOP003 Fatigue Management and Duty Time Limitations)

3.8.1 Natural and cultural considerations for response

Response activities will identify and consider areas of cultural significance. Where emergency works have the potential to impact culturally sensitive sites, the Incident Controller will seek advice from a Country Advisor. Given that these events often affect areas of high cultural sensitivity, early engagement is important to inform decision-making. The most significant impacts are typically experienced during the recovery phase (refer to the recovery section below).

3.9. Initial Impact Assessment

As part of the Victorian Preparedness Framework, the SEMP and SEMP flood sub-plan (3.6.11 Initial impact assessment) details agencies and their roles and core capabilities when it comes to flood and storm impact assessments.

3.10. Storm Response Arrangements

In the initial response phase, VICSES Units will receive Request for Assistance (RFA's) direct from Triple Zero Victoria and will typically respond in a business-as-usual mode, typically attending events in order of receipt or priority. This is in accordance with the VICSES Operations Management Manual.

For more detailed storm damage specific response arrangements refer to **Annex E** in the Flood and Storm Intelligence and VICSES Response Arrangements for Nillumbik Shire (restricted).

3.11. Evacuation Arrangements

Under the SEMP, Victoria Police (VicPol) has the responsibility for evacuation (Evacuation Manager) – in consultation with the control agency and other expert advice.

The IC is responsible for making a decision in consultation with VicPol as to whether evacuation is a safe option for communities and individuals.

In making this decision the IC may seek advice from other agencies or communities, as detailed in JSOP 03.12 – Planned Evacuation for Major Emergencies.

Refer to the MEMP for additional local evacuation considerations for the municipality

3.12. Response to flash flooding

Flash flooding can be defined as flooding that occurs within six hours or less of the flood-producing rainfall within the affected catchment. This may result in isolation of individuals and communities as time to warn and respond to flash flooding is limited. The safest place to be in a flash flood is well away from the affected area. Accordingly, pre-event planning for flash floods should commence with an assumption that evacuation is the most effective strategy, provided evacuation can be safely implemented.

Emergency management response to flash flooding should be consistent with the SEMP Storm Sub-plan.

3.13. Flood Rescue

Under Victoria's Emergency Management Arrangements, rescue is considered separately to the relocation of people who are stranded or isolated by floodwater. Where the water is either fast or swift flowing and/or the people being assisted are facing actual or threatened danger of physical harm, the response escalates from relocation to rescue.

Under the SEMP Response table 9 the control agency for rescue from land and water is VicPol, who operate the State Police Search and Rescue Coordination Centre (SPSARCC). VICSES is a support agency for search and rescue on land and water evacuations and incidents involving mass casualties.

To conduct water rescues during a flood, VicPol will often require assistance of appropriately trained and equipped personnel from support agencies including VICSES, Volunteer Marine Search and Rescue Organisations, CFA, FRV and Life Saving Victoria. VicPol will coordinate with these agencies to ensure operational readiness for activation.

On occasion, VicPol may opt to respond a field capability of its Rescue Coordination Centre to a location near the emergency. It may also work with the Triple Zero Victoria to deploy its dispatch capability to the same location to enhance rescue coordination and dispatch. Details in this plan may assist VicPol and Triple Zero Victoria in undertaking this function in the field or from the primary SPSARCC.

Refer to **Annex C** for known high-risk areas/communities (such as low-lying islands) where rescues might be required in the Flood and Storm Intelligence and VICSES Response Arrangements for the Nillumbik Shire (restricted).

3.14. Aircraft Management

Aircraft can be used for a variety of purposes during flood operations including evacuation, resupply, reconnaissance, intelligence gathering and emergency travel.

3.15. Animal welfare

Matters relating to the welfare of livestock and companion animals (including feeding, water and rescue) are to be referred to DEECA - Agriculture Victoria.

Requests for emergency supply and/or delivery of fodder to stranded livestock or for livestock rescue are passed to DEECA - Agriculture Victoria.

Matters relating to the welfare of wildlife are also to be referred to DEECA who has developed the Victorian Emergency Animal Welfare PlanMatters relating to the welfare of wildlife are also to be referred to DEECA who has developed the Victorian Emergency Animal Welfare Plan.

Nillumbik Regional Pound Facility is Council owned and managed operating seven days a week. The pound can accommodate domestic pets and livestock in emergency situations. Nillumbik Shire Council Domestic Animal Plan 2025 -2029

3.16. Essential community infrastructure and property protection

Essential community infrastructure and property such as residences, businesses, roads and utilities may be affected in the event of a flood.

VICSES maintains a stockpile of sandbags, Nillumbik Shire Council does not supply them. The IC will determine the priorities related to the use of sandbags, which will be consistent with the strategic priorities.

The VICSES Operations Management Manual sets out the principles for sandbag use and allocation to the community. These principles do not apply to the use of sandbags by VICSES to construct and/or alter a levee. Refer to Sandbag filling and collection point guide and SOP036 Construction, Removal or Altering of Levee and Removal of Debris for further detail.

The IC will ensure that owners of essential community infrastructure are kept advised of the flood situation. Essential community infrastructure providers must keep the IC informed of their status and ongoing ability to provide services.

https://www.ses.vic.gov.au/plan-and-stay-safe/sandbag-guide for the most current sandbag guidelines or download it from the IMT Toolbox in EMCOP-Operations.

For more specific details of essential infrastructure requiring protection and location of sandbag collection point(s) refer to **Annex C** in the Flood & Storm Intelligence and VICSES Response Arrangements for the Nillumbik Shire (restricted).

3.16.1 Disruption to services

Disruption to services other than essential community infrastructure and property can occur in flood and storm events.

For more detailed arrangements of likely disruption to services and proposed arrangements to respond to service disruptions refer to **Annex C** in the Flood & Storm Intelligence and VICSES Response Arrangements for the Nillumbik Shire (restricted).

3.16.2 Traffic Management

Nillumbik Shire and Department of Transport and Planning (DTP) will carry out their formal functions of road closures including observation and placement of warning signs, road-blocks to its designated local and regional roads, bridges, walking/bike/shared trails. Nillumbik Shire staff should also liaise with and advise DTP as to the need or advisability of erecting warning signs and/or of closing roads and bridges under its jurisdiction. DTP are responsible for designated main roads and highways and councils are responsible for the designated local and regional road network.

DTP and Nillumbik Shire will provide community information direct to the public regarding road closures. Information will be updated on the VIC Traffic website: https://traffic.vicroads.vic.gov.au/

For more detailed arrangements of potential road closures refer to **Annex C** in the Flood and Storm Intelligence and VICSES Response Arrangements for Flood and Storm in Nillumbik Shire (restricted).

3.16.3 Traffic Management Plan

Traffic management will be undertaken in accordance with JSOP 03.10 Traffic Management at Major Emergencies. The IC, who has overall responsibility for incident control, will consult with Victoria Police and, where possible, the responsible road authority to develop, implement, and monitor a Traffic Management Plan. Within Hume, DTP is responsible for the arterial road network, while Hume City Council is responsible for local and regional roads, bridges, and trails. Victoria Police will coordinate the restriction of access to affected areas as directed by the IC and may support the enforcement of closures and roadblocks.

Traffic management arrangements must ensure safe egress for affected residents and businesses, and access for emergency services. For emergency services, this will include effective movement of vehicles along the length of the flooded area.

3.17. Access to technical specialists

VICSES manages contracts with private specialists who can provide technical assistance in the event of flood operations or geotechnical expertise. The Regional Controller or delegate (e.g.: VICSES RDO or IC) should make a formal request to the VICSES State Duty Officer (SDO) for the engagement of a Flood Analyst or Technical Specialist. VICSES SOP061 outlines this detail, including the procedure for accessing technical specialists.

These services may be required particularly where Melbourne Water or Local Government staff are unable to assist in an Incident Control Centre. Specifically, they can provide the following key professional services:

- Flood intelligence (Flood Analysts).
- Geotechnical assessments.

3.18. Relief

Relief is the provision of assistance to meet the essential needs of individuals, families and communities during and in the immediate aftermath of an emergency.

Suitable relief facilities identified for use during storms and/or floods, along with the associated relief arrangements are considered restricted information. This information can be obtained by agencies through the Nillumbik Shire Council Senior Emergency Management Coordinator (SEMC) or the Municipal Emergency Response Coordinator (MERC). Community will be advised of the location and relevant details once a facility has been activated during a flood and/or storm event.

As per the role statement for municipal councils within the SEMP, municipal councils are responsible for Municipal relief coordination.

Refer to the MEMP for more detailed arrangements for the Nillumbik Shire.

3.18.1 Activation of emergency relief

Refer to the SEMP Roles and Responsibilities - Relief for more detail of services that may be provided and the responsible coordinating agencies.

Arrangements for relief from a flood and/or storm event within the Nillumbik Shire is detailed in the Nillumbik Shire MEMP.

3.19. Resupply

Communities, neighbourhoods or households can become isolated during floods and in some cases, storms. This can be as a consequence of road closures or damage to roads, bridges and causeways. Under such circumstances, the need may arise to resupply isolated communities/properties with essential items.

When predictions/intelligence indicates that communities, neighbourhoods and/or households may become isolated, VICSES will advise businesses and/or households that they should stock up on essential items.

After the impact, VICSES can support isolated communities through assisting with the transport of essential items to isolated communities and assisting with logistics functions.

Resupply operations are to be included as part of the emergency relief arrangements with VICSES working with the relief agencies to service communities that are isolated.

For more detailed arrangements/information refer to **Annex C** in the Flood Intelligence and VICSES Response Arrangements for Nillumbik Shire (restricted).

3.20. Recovery

As per the role statement for municipal councils within the SEMP, municipal councils are responsible for coordinating local level recovery activities. They are also the lead agency to coordinate post emergency needs assessment to determine long term recovery needs (Post Emergency Needs Assessment).

Arrangements for recovery from a flood and/or storm event within the Nillumbik Shire is detailed in the Nillumbik Shire MEMP

3.20.1 Transition from response to recovery

The SEMP sets out the transition to recovery arrangements. During the response phase, the IC will ensure they develop a plan for transition from response to recovery. The IC at the municipal tier should take a lead role in facilitating transition to recovery, working with the Municipal Recovery Manager (MRM), as it marks the end of the response phase which the Controller leads and manages.

3.20.2 Environmental and cultural heritage recovery

Local recovery planning will recognise and respect culturally significant places, Country, and the health and wellbeing of Aboriginal communities. Recovery activities should support the involvement of Traditional Owner organisations and Cultural Heritage Advisors to enable culturally informed approaches that minimise harm to Country, culture, and community.

At the municipal level, Council coordinates recovery activities and will engage with the Traditional Owner organisations as appropriate. This supports culturally informed recovery outcomes and aligns with Victoria's commitment to self-determination.

Emergency Management Victoria (Relief and Recovery) provides regional coordination and may support engagement with Traditional Owners, particularly during larger or multi-municipality events.
DEECA is the lead agency for environmental recovery and works with relevant stakeholders, including Traditional Owners, to support environmental restoration and rehabilitation.

The integration of Traditional Owner knowledge, cultural values, and practices within flood recovery planning will continue to evolve as partnerships, policy, and guidance develop over time

3.21. After action review – Lessons Management

Lessons management is the critical process of learning from how we worked before and during an event, to improve the system for next time.

Depending on the size and scale of the flood or storm event, VICSES will normally coordinate a debrief or after action review of flood or storm operations as soon as practical following an event. Under the VicPol SEMP role statement, it is the responsibility of the Municipal Emergency Response Coordinator (MERC) to ensure that this occurs.

When the flood is being managed as a level 3 event, Emergency Management Victoria (EMV) in consultation with VICSES may assume responsibility for debriefing.

All agencies involved in the flood incident should be represented at the debrief or after action review.