North West (Loddon Mallee) Region

Emergency Response Plan

SES

Storm Sub Plan

Published by Victoria State Emergency Service

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This publication is intended to be consistent with the State Emergency Response Plan (SERP), published by Emergency Management Victoria in 2016.

Authorised by the Victoria State Emergency Service
168 Sturt Street, Southbank

An electronic version of the plan can be obtained at www.ses.vic.gov.au.

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North West (Loddon Mallee) Region Emergency Response Plan – Storm Sub-plan Certification

The North West (Loddon Mallee) Region Emergency Response Plan – Storm Sub-plan deals with response to storm incidents within the North West (Loddon Mallee) Region's area of responsibility.

The following plan is intended to provide the framework for North West (Loddon Mallee) Region to effectively and efficiently respond to future emergencies caused by storms, and will remain current until rescinded by authority of the Victoria State Emergency Service Chief Officer Operations.

_____ Date: 10 October 2019

Tim Wiebusch
Chief Officer Operations

This plan is produced by Victoria State Emergency Service (VICSES) and has been adapted from the State Emergency Response Plan – Storm Sub-plan. All information contained in this plan was current at time of publication.

VICSES would like to acknowledge the significant contribution of key stakeholders to ensure the content contained within this plan is of a high quality to support response activities.

For further details about this plan, please contact North West (Loddon Mallee) Region:

Regional Manager – North West (Loddon Mallee) Region
Victoria State Emergency Service
7 Rohs Road
East Bendigo VIC 3550

Email: northwest@ses.vic.gov.au
Website: www.ses.vic.gov.au

State Emergency Management Priorities

The State Emergency Management Priorities are:

- Protection and preservation of life is paramount. This includes:
  - Safety of emergency response personnel.
  - Safety of community members including vulnerable community members and visitors/tourists.
- Issuing of community information and community warnings detailing incident information that is timely, relevant and tailored to assist community members make informed decisions about their safety.
- Protection of critical infrastructure and community assets that support community resilience.
- Protection of residential property as a place of primary residence.
- Protection of assets supporting individual livelihoods and economic production that supports individual and community financial sustainability.
- Protection of environmental and conservation assets that considers the cultural, biodiversity, and social values of the environment.

Table of Contents

1. Introduction

1.1. Purpose

The purpose of this plan is to provide strategic guidance for the effective emergency management of storm impacts in the North West (Loddon Mallee) Region.

1.2. Objective

The objective of the North West (Loddon Mallee) Region Emergency Response Plan – Storm Sub-plan is to outline the arrangements to ensure an integrated and coordinated approach to the management of storm events across the North West (Loddon Mallee) Region, in order to reduce the impact and consequences of these events on the community, infrastructure and services.

1.3. Scope

This North West (Loddon Mallee) Region Emergency Response Plan – Storm Sub-plan includes:

- Description of potential risks and consequences of storms to the social, built, economic and natural environments within the North West (Loddon Mallee) Region.
- Region specific emergency management arrangements for the management of storms.
- Links to sources of information where the reader can obtain further detail.

1.4. Authorising environment

The *Emergency Management Act (1986 and 2013)* is the empowering legislation for the management of emergencies in Victoria.

The Emergency Management Manual Victoria (EMMV) outlines policy and planning documents for emergency management in Victoria, and details the roles organisations play in the emergency management arrangements.

The State Emergency Response Plan (Part 3, EMMV) identifies Victoria's organisational arrangements for managing the response to emergencies.

The North West (Loddon Mallee) Region Emergency Response Plan (yet to be developed) will detail specific arrangements for the management of emergencies within the North West (Loddon Mallee) Region. This plan has been developed as a subordinate plan of the North West (Loddon Mallee) Region Emergency Response Plan and the State Emergency Response Plan – Storm Sub-plan. This plan has been shared with the Regional Emergency Management Committee for comment, and approved by the VICSES Chief Officer Operations.

Other relevant legislation includes:

- *Victoria State Emergency Service Act 2005.*
- *Essential Services Act 1958.*
- *Planning and Environment Act 1989.*
- *Local Government Act 1989.*

1.5. Activation of the Plan

The arrangements in this plan apply on a continuing basis and do not require activation.

1.6. Audience

The audience for this plan comprises the Victorian Government and agencies within the emergency management sector, including business and community groups with a significant role in the management of the emergency.

Although the wider community is not the primary audience, community members may find the contents of this plan informative.

1.7. Linkages

This plan is a sub-plan of the State Emergency Response Plan – Storm Sub-plan and the North West (Loddon Mallee) Region Emergency Response Plan (yet to be developed). It reflects legislation, the arrangements in the State Emergency Response Plan, the strategic direction for emergency management in Victoria and the accepted State practice for managing emergencies.

It is likely that storm events may include severe flooding, flash flooding and building damage. For management of riverine flooding, refer to the State Emergency Response Plan – Flood Sub-plan and North West (Loddon Mallee) Region Flood Sub-Plan at www.ses.vic.gov.au.

While uncommon, Thunderstorm Asthma may also be associated with storm events as a result of high pollen counts and higher than normal levels of humidity. Thunderstorm Asthma arrangements have been developed by the Department of Health and Human Services (DHHS) and the Environmental Protection Agency (EPA). See www.dhhs.vic.gov.au and www.betterhealth.vic.gov.au for more information.

A table detailing the criteria for issuing Severe Thunderstorm Warnings and Severe Weather Warnings is contained in the State Emergency Response Plan – Storm Sub-Plan.

Arrangements in this plan have not been repeated from afore mentioned plans, unless necessary to ensure context and readability. All available Victoria State Emergency Service Plans can be accessed at www.ses.vic.gov.au.

Arrangements for the management of secondary consequences are contained in the following:

- For health response – State Health Emergency Response Plan (SHERP).
- For rescue – the Victorian Urban Search and Rescue (USAR) Response Arrangement.
- Flood response – State Emergency Response Plan – Flood Sub-plan, and Loddon Mallee Emergency Response Plan – Flood Sub-plan.

1.8. Exercising and Evaluation

This plan will be exercised within one year of the date of approval and once every three years thereafter as part of a phased cycle. An example of a Regional Storm Scenario has been created to support this function, and is contained in Attachment 2.

Exercises will be evaluated and, where improvements to the emergency management arrangements in this plan are required, the plan will be amended and a revised version issued. Exercises will be conducted in accordance with the State Exercising Framework.

Any operational activity in the North West (Loddon Mallee) Region requiring the management of a storm event will be regarded as exercising of the plan. The event is to be evaluated and reviewed, as outlined above.

1.9. Review

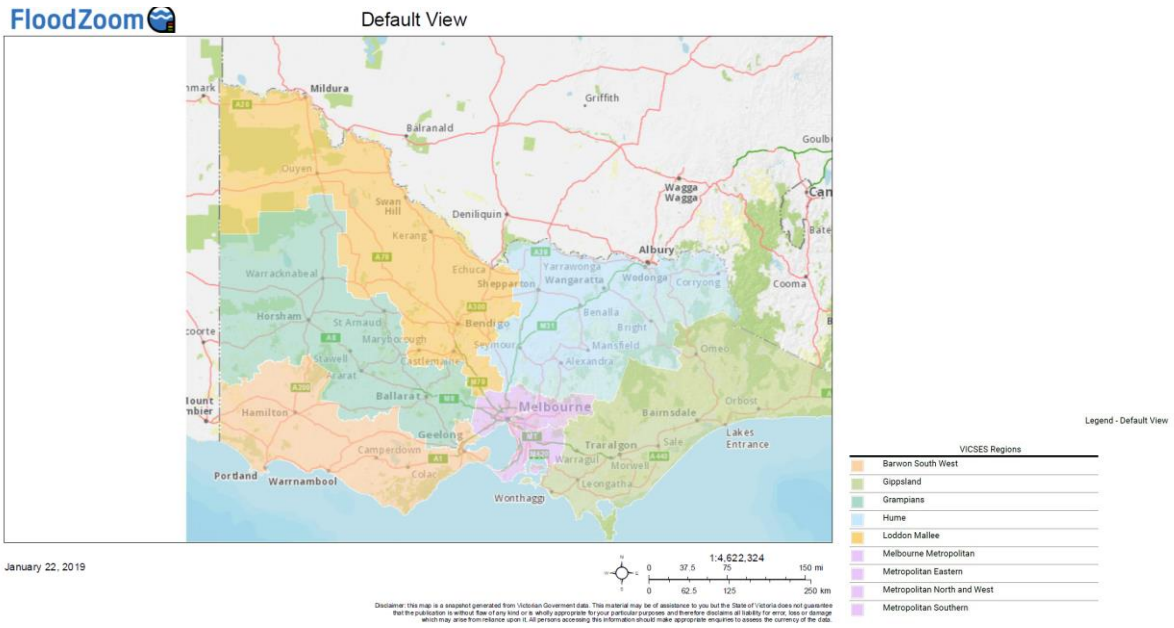
This plan was current at the time of publication and remains in effect until modified, superseded or withdrawn.

This plan will be reviewed and updated every three years. Consideration will be given to an earlier revision if the plan has been applied in a major emergency or exercise, or following a substantial change to the relevant legislation or arrangements.

2. The Storm Risk within the North West (Loddon Mallee) Region

2.1. Region Description

VICSES Regional Map



The North West (Loddon Mallee) Region of Victoria covers 59,000 square kilometres and occupies more than one quarter of the area of Victoria. Geographically this area is diverse and includes:

- Numerous towns and cities of varying sizes.
- Ten municipalities.
- A population of approximately 332,000, with 4.5% originate from non-English speaking countries, and a total of 8.8% born overseas. Tourism is a significant industry within the region with more than 7 million visitors annually.
- The region encompasses a number of culturally sensitive sites, particularly along the Murray River.
- A significant number of National and State parks.
- Shared borders with the states of South Australia and New South Wales.
- A number of major highways, roads and rail systems.
- An increasing number of community members working in Melbourne, with a daily commute by road and rail.
- The potential for storms in the region to affect the state of Victoria's economic, business continuity and possible future development opportunities.
- Significant areas of horticulture, viticulture, agriculture and dry land farming in the north of the region.
- Bendigo (pop 110,000) and Mildura (pop 54,000) as the largest city centres.
- A section of the Murray Darling Basin Authority (northern area of the region).
- The semi-arid, Great Dividing Range.
- The Murray River, which runs along the entire Northern border of the region.

- Mining infrastructure.
- Significant wine table grape and stone fruit production.
- Dryland farming and livestock.

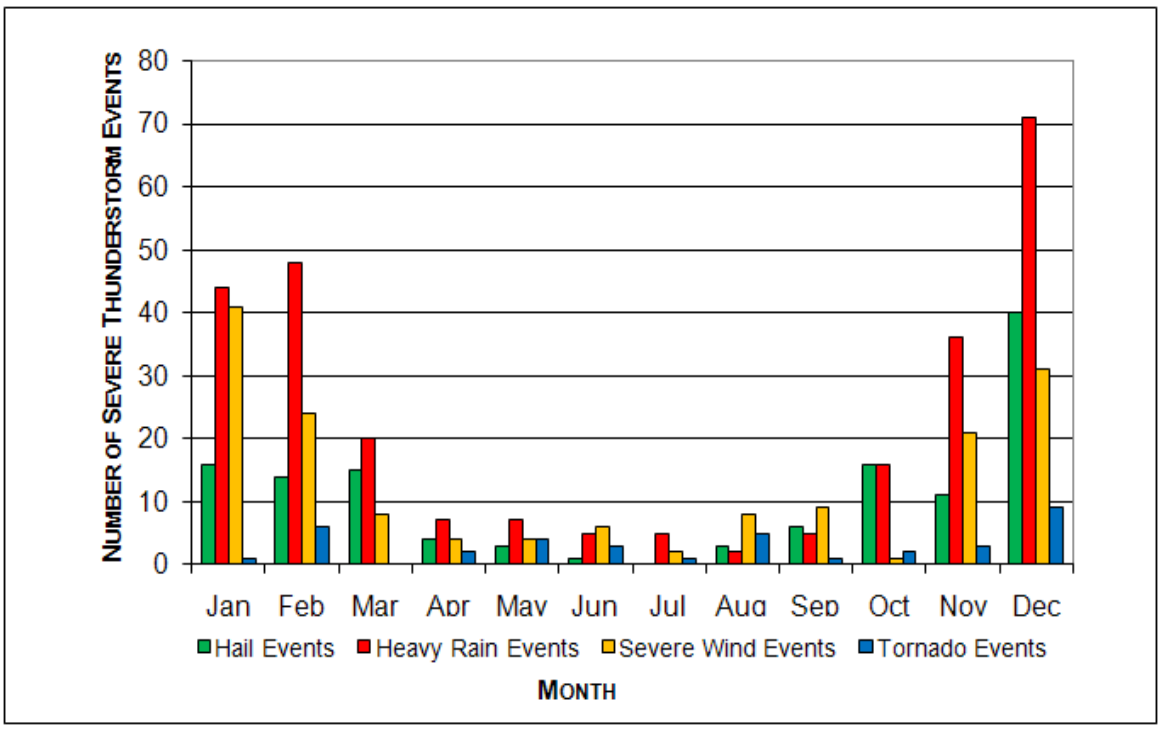


Figure 1: Monthly distribution of reported Severe Thunderstorm Events in Victoria – July 2000 to June 2010 (data provided by the Bureau of Meteorology (BOM)).

2.2. The Storm Hazard

Storms in the context of this plan include wind storms, dust storms, tornados, snow storms, blizzards, hail storms and severe thunderstorms including hail storms and heavy rain leading to flash flooding.

The sector generally divides severe weather events affecting land-based communities into two broad categories:

- Thunderstorm events.
- Other severe weather events not directly associated with severe thunderstorms, tropical cyclones or bushfires.

BOM is responsible for issuing warnings for severe weather events.

2.3. Severe weather and severe thunderstorm

In Australia, the Bureau of Meteorology defines a severe thunderstorm as one that produces any of the following:

- Hailstones with a diameter of 2cm or more.
- Wind gusts of 90km/h or greater.
- Flash flooding.
- Tornados.

A severe thunderstorm may be exceeded by a very dangerous thunderstorm which is defined as one that produces hailstones with a diameter of 5cm or more and/or wind gusts of 125km/h or greater.

The types of hazardous phenomena associated with severe weather include land gales, squalls, wind sheer and heavy rain leading to flash flooding and blizzards.

2.4. Regional resources

Key regional resources used for Flood response are available in the VICSES Resource Management System **by contacting the VICSES Regional Agency Commander (RAC) or Regional Duty Officer (RDO)**.

For a list of key regional resources available for use during a storm event see Attachment 1.

Additional expert multi-agency resources may be accessed during operations through the Australasian Inter-Service Incident Management System (AIIMS) structure.

A map of VICSES Unit General Response Boundaries is accessible via Emergency Management – Common Operating Picture (EM-COP) for registered users. See: https://cop.em.vic.gov.au / Situation / Data / Boundaries / Emergency Services / SES Response Boundaries.

3. Consequences

3.1. Possible storm consequences

The Loddon Mallee Region has many communities prone to storm events. The effects of storm on the community can include:

- Loss of life or serious injury.
- Damage to or loss of:
  - Key infrastructure – road, rail, public buildings.
  - Essential services – power, water, sewerage, gas, telecommunications.
  - Private property.
  - Industry/business.
  - Agriculture – crop and livestock.
  - Damage to the environment.

Significant community disruption can occur from damage to essential infrastructure, which may lead to cascading secondary consequences. For example, a loss of power may result in a loss of sewerage systems, telecommunications, traffic signals and disruption to supply chains, among other impacts. Damage and flooding of road infrastructure may result in isolation of properties and/or communities.

Information on building critical infrastructure resilience is available in the State Emergency Response Plan – Storm Sub-plan. This is supported by the Victorian Critical Infrastructure Resilience Strategy available at www.emv.vic.gov.au/our-work/critical-infrastructure-resilience.

3.2. Storm history

The table below provides information on historical storms within the North West (Loddon Mallee) Region. For further information, refer to the State Emergency Response Plan – Storm Sub-plan or BOM's Severe Storm Archive via http://www.bom.gov.au/australia/stormarchive/.

Year	Locality impact	Description	Consequence
1977	Redcliffs, Cardross	Hail event	Causing damage to crops/fruit trees and an estimated 20,000 tons of dried fruit valued at approx. $17 m
2003	Bendigo	F2 tornado, wind speeds ranged from 130 to 150 kph, at the centre of the storm Traveling 7 kms with a 500mtr wide path	Major structural damage to nursing home and eight houses rendered uninhabitable. A further 44 buildings suffering various degrees of damage. Large number of trees down, and significant power outages in the district. Major disruption to roads and rail services, damage estimated to be in the millions of dollars
2003	Mildura	Severe thunderstorm, rain event. Flash flooding and strong winds with 43.4 mm of rain falling in 22 min, and wind gusts of 110 kph recorded	
2007	Mildura	Severe thunderstorm, rain event. Flash flooding with 48 mm of rain falling in 10 min	1600 calls for assistance with 35 rescue calls

2011	Mildura	Severe thunderstorm. Flash flooding with 108 mm of rain falling in 4 hours	Large part of the town and surrounds inundated, with some parts becoming inaccessible. 838 calls for assistance 21 buildings damage. Significant crop damage. Further information available in the Mildura Flood and Storm Emergency Plan
2011	Bendigo	Severe thunderstorm, rain event. Flash flooding – more than 164mm of rain fell between 10/01/2011 to 14/01/2011, with 64 mm recorded throughout 24hour period on 14/01 at Bendigo Airport	160 calls for assistance, 22 calls for building damage and 120 for flash flooding consisting of overland flooding with a number of calls for building inundation
2012	Castlemaine	Severe thunderstorm, rain event. Flash flooding – more than 157 mm of rain in a 48 hour period, with 98 mm falling throughout a 24 hour period on the 28/02	120 calls for assistance, with 16 calls for building damage and 86 for flash flooding which consisted of overland flooding, and a number of calls for building inundation. A number of roads closed
2016	Mildura	Severe thunderstorm, wind event. Wind gusts of up to 96 kph recorded at the airport, but likely to be much higher in other parts. 29mm of rainfall recorded in 15 minutes, with golf ball sized hail reported	283 buildings damaged, with 5 rendered uninhabitable, 77 municipal buildings damaged, 1,327 rural properties affected. More than 3,800 ha of both dryland and viticulture crops, and other significant rural damage More than 21,000 properties without power Further information available in the Mildura Flood and Storm Emergency Plan
2017	Mildura	Severe thunderstorm and wind event with gusts up to 89kph	200 calls for assistance, with 88 for building damage, and 120 trees down
Various	Bendigo	Severe thunderstorm, rain event. Flash flooding in Bendigo from Bendigo Creek, running through the heart of Bendigo City. Seven recorded events where in excess of 50 mm of rain fell within 1.5 hours	Numerous road closures, potential for extensive flooding of the Bendigo CBD. Extensive flooding downstream of Bendigo, particularly around Epsom and Huntly Depending on location of rainfall there has been significant overland flooding, with potential to cause inundation of buildings
Various	Severe wind and flash flood events. Locations include Woomelang, Rochester, Rushworth. Birchip, Kyabram, Castlemaine, Maryborough and Echuca	Various severe thunderstorms, across the region. Details not been included as they fall below our benchmark of <80 tasks	Damage to private, local government and commercial buildings Impacts such as road closures, trees down, power outages, and disruption to rail services
2018	Birchip	Severe thunderstorm, rain	Damage to private, local government

		event. Flash flooding – more than 148 mm of rain in a 48 hour period	and commercial buildings. Impacts included road closures, five homes inundated, 19 homes with underfloor flooding, 1 school impacted, numerous businesses impacted.

Note: These events are not uncommon and whilst a Severe Weather Warning may indicate possible impact areas, the inability to accurately forecast the exact location of a Severe Weather event could mean communities and agencies can be caught out unaware.

4. Community resilience

4.1. Shared and individual responsibility for action

The National Strategy for Disaster Resilience, developed by the Council of Australian Governments (COAG), provides high-level guidance on disaster management to agencies with a role in emergency management.

Foremost in the Strategy is the principle of all of society taking responsibility for preparing for disasters. Examples in the context of storms include:

- Individuals being aware of their storm risk, and following advice from emergency services when responding to warnings.
- Local governments and communities including storm risk within their Community Emergency Risk Assessment (CERA) activities, including consideration within emergency management planning and land use planning.
- Industry and businesses planning for the risk of disruption, and ensuring arrangements are in place to maintain critical services, and assist communities where possible.
- Government agencies undertaking:
    - Risk assessments to gain an appreciation of storm risk.
    - Engaging with the community regarding storm risk.
    - Working with communities to plan the management of storm risk.
    - Providing emergency information and storm warnings.
    - Ensuring an effective, well-coordinated response during storms.
    - Helping communities to recover and learn following a storm and to build their resilience to future events.

The Victoria State Emergency Service has developed a Community Resilience Strategy and delivers programs to at-risk communities to provide information on what to do before, during and after storms. For more information go to www.ses.vic.gov.au/get-ready.

4.2. Forecasting and warning services

BOM has a requirement under the *Meteorology Act 1955* to warn the community and provide the following services to VICSES, which the State Emergency Response Plan – Storm Sub-plan outlines in detail:

- Severe Weather Outlook – five-day outlook.
- Severe Thunderstorm Forecast Chart – thunderstorm forecast issued at 11:30am each day indicating the chance of thunderstorms (outside storm season). A Day 2 forecast will usually be issued at midday during “thunderstorm season” (October to April).
- Severe Weather Warnings – Issued when severe weather is expected to affect land-based communities within 6-24 hours and one or more of the following applies:
    - It is not directly the result of severe thunderstorms.

- It is not covered by tropical cyclone or fire weather warnings.
- Severe Weather is already occurring and a warning is not already current.

- Severe Thunderstorm Warning – issued whenever there is sufficient meteorological evidence to suggest that severe thunderstorm development is likely, or when a severe thunderstorm has already developed and a warning is not already current.

4.3. Municipal storm emergency planning

Where storm is identified through the emergency risk management process as a high priority to a community, VICSES will provide advice and support to the Municipal Emergency Management Planning Committee (MEMPC) to ensure the Municipal Emergency Management Plan (MEMP) contains, at a minimum, arrangements for the response to a storm event based on an all-hazards and all-agency response.

4.4. Community engagement

Community engagement programs to build community resilience for storm are conducted in accordance with the VICSES Community Resilience Strategy, as outlined in section 4.1 Shared and Individual Responsibility for Action.

The North West (Loddon Mallee) Region community engagement strategy includes the following:

- Community and local knowledge consultation and engagement.
- Regular unit/regional/state activities and events to reinforce the risk message.
- Participation in multi-agency hazard education activities.
- Participation in community-led emergency planning.
- Building resilience and capacity within communities.

4.5. Household and business plans

The Emergency Management Commissioner encourages every household and businesses to have a written emergency plan. Information on the development of household and business plans is available at www.ses.vic.gov.au.

VICSES also supports Caravan Park owners in the North West (Loddon Mallee) Region to prepare for emergencies through the use of an online planning tool, available at https://www.ses.vic.gov.au/get-ready/caravan-park-information.

4.6 Community safety advice

VICSES provides storm advice to community in the form of key safety messages. A full list of community safety advice messages are available to view online via EM-COP, in the IMT Toolbox.

5. Managing a storm event

5.1. Roles and responsibilities

The State Emergency Response Plan – Storm Sub-plan details the roles and responsibilities of agencies involved in responding to storms.

5.2. Concept of operations

The State Emergency Response Plan – Storm Sub-plan details the concept of operations for responding to storms.

During an incident, municipalities will be requested to provide an Emergency Management Liaison Officer (EMLO) to support operations at an identified location, such as a Divisional Command Point (DCP) or an Incident Control Centre (ICC) depending on the nature and location of the event.

5.3. Escalation and notification

As detailed in section 4.2, BOM publishes Severe Weather and Severe Thunderstorm Warnings on its public website (www.bom.gov.au) and circulates them to pre-identified agencies, organisations and media outlets, via pager and email warning messages, including to VICSES at the State and Regional Level.

Upon receipt of a Severe Weather or Severe Thunderstorm Warning, RDOs will acknowledge the pager message and notify the RAC to notify the Regional Controller (RC) and/or Regional Emergency Management Team (REMT) members for storm response, and any relevant units.

The escalation and notification process for storm response is operationalised within VICSES Standard Operating Procedure (SOP) 008 – Severe Weather Notification and Activation Process.

5.4. Strategic Response Planning

The actions listed below are the responsibility of VICSES at the regional and State tiers. Responsibility for these actions may transition to the RC to support multi-agency response when significant impacts caused by a storm event occur. Associated storm readiness levels and ICC footprints can be accessed within *JSOP 2.03 Incident Management Team (IMT) Readiness Arrangements* or the VICSES Storm Readiness and Activation Trigger Considerations (v3.0), also available via Attachment 1 – IMT Readiness Levels – Storm.

On receipt of advice from BOM of the potential for storm activity, the RAC will undertake strategic level planning in anticipation of an event, in alignment with VICSES severe weather triggers. Key considerations will include:

- Establishing the control structure for managing the event.
- Consulting and informing the RC to determine level of preparedness and response.
- Supporting consistent emergency warnings and provision of information to the community.
- Preparations for possible evacuations including implementation of evacuation and emergency relief plans and identification of evacuation points.
- Confirming agencies at all tiers are activated and appropriate arrangements are in place.
- Identifying the likely consequences of the storm event and any interdependencies that may affect planning.
- Confirming agencies have adequate resources in place to fulfil their responsibilities and are planning for sustainment and surge capacity, including identification of need for inter-state assistance.
- Identifying mass gatherings and large public events that may be at risk, and arrangements to ensure the safety of individuals attending.
- Confirming agencies with call-taking responsibilities have resources in place and backup arrangements to cope with the expected call load.

- Positioning of EMLOs from key support agencies to Regional Control Centres (RCCs), where appropriate.
- Arranging for regular meetings of the REMTs and Incident Emergency Management Teams (IEMTs).
- Providing situation reports to the State Control Team (SCT).

5.5. Cross border arrangements

North West (Loddon Mallee) Region has cross border arrangements with New South Wales (NSW) and South Australia (SA) State Emergency Services (SES), supported by a Memorandum of Understanding (MOU) that outlines how VICSES will request assistance.

- In the case of an event within the immediate border area, the VICSES Assistant Chief Officer or delegate will request from NSW SES Murray Regional Controller or SA SES Murraylands Controller or delegate such support as is immediately required and notify the VICSES State Duty Officer (SDO).
- In the case of an event within Victoria but outside the immediate border area, the request will be escalated to VICSES Chief Officer Operations or delegate.

Interstate arrangements with NSW and SA can be found at https://cop.em.vic.gov.au – under the Library Tab.

During significant storm events, it is common for additional units to be deployed to neighbouring regions, with reciprocal arrangements for units deployed to support North West (Loddon Mallee) Region.

5.6. Regional Control Centre

The following pre-determined facilities are suitable for the establishment of a RCC for the management of storm events.

North West (Loddon Mallee) Regional Control Centre
Valentines Walk
Bendigo, VIC, 3550

The RCC backup facility is located at:

VICSES Bendigo Regional Office
7 Rohs Road,
East Bendigo, VIC, 3550

A map of RCC footprints is available to view in EM-COP (Situation Tab > Data > Boundaries > Emergency Services > Victorian EM Regions).

5.7. Incident Control Centres

ICC locations that have been pre-determined for storm response are detailed in the table below:

Location	Local Government Area within footprint
L3: Bendigo, Department of Environment, Land, Water and Planning (DELWP) Midland Hwy, Epsom	Mount Alexander Central Goldfields Greater Bendigo Loddon Campaspe *Gannawarra Macedon Ranges
L3: Mildura, DELWP Cnr. Koorlong Av and 11th St. Irymple	Mildura Swan Hill *Gannawarra

*Note: Gannawarra may be managed by either Bendigo or Mildura depending on event.

A map of ICC footprints is available to view in EM-COP (Situation Tab > Data > Boundaries > Emergency Services > ICC Footprints > Flood/Storm) or JSOP - J02.03.

5.8. Divisional Command Points

Identified and endorsed DCPs within the North West (Loddon Mallee) Region are contained in VICSES SOP 070, available at www.ses.vic.gov.au. Note: other suitable facilities may be utilised at the discretion of the Incident Controller (IC).

The table below provides the details of current predetermined DCP locations:

Location	VICSES units within footprint	Local Government Area
Bendigo (VICSES)	Bendigo, Marong, Wedderburn,	Bendigo
Swan Hill (VICSES)	Swan Hill, Robinvale	Swan Hill
Wycheproof (VICSES /Country Fire Authority (CFA))	Wycheproof, Birchip, Woomelang (St Arnaud MW)	Buloke
Mildura (VICSES)	Mildura, Ouyen, Murrayville,	Mildura
Castlemaine (CFA)	Castlemaine	Castlemaine
Maryborough (DELWP/CFA)	Maryborough, Dunolly	Central Goldfields
Kyneton (CFA)	Woodend	Macedon Ranges
Kerang (CFA)	Kerang	Gannawarra
Echuca (CFA)	Echuca, Rochester, Kyabram, Rushworth, Echuca/Moama SRS	Campaspe
Gisborne (CFA)	Gisborne	Macedon Ranges
Pyramid Hill (CFA)		Loddon

Divisional Command Location footprint maps can be located at https://hub.ses.vic.gov.au/command-and-control-facilities (VICSES members only).

Transfer of Control

There are circumstances when an incident should be managed by an IC based in an ICC and supported by an Incident Management Team (IMT) with specialist skills and equipment, rather than by a field-based IC. Refer to Joint Standard Operating Procedure (JSOP) J03.15 for details.

These circumstances include where the incident is a major emergency or has the potential to become a major emergency, or where there is the need to do one or more of the following:

- Issue warnings and advice to the community.
- Evacuate the community.
- Protect the community.
- Manage significant risks or consequences, for example to:
    - The community.
    - Community infrastructure.
    - Essential services such as electricity and water.
    - The economy.
    - Significant environmental or conservation assets.

- Manage a large number of personnel and other resources such as aircraft.
- Produce incident predictions.
- Implement health and safety systems for response personnel.
- Provide direction to multiple response agencies.
- Manage multiple incidents within the area.

5.9. Regional resource requirements

Resource requirements for significant storm activity within each ICC footprint are not predetermined and will be allocated as required.

A list of key regional resources which may be used in a storm event are shown in Attachment 1

Refer to the Victoria Emergency Management Operations Handbook via www.emv.vic.gov.au/publications/victorian-emergency-operations-handbook-2017 for agreed resourcing levels and JSOP 3.09 – Resource Request Process (http://files.em.vic.gov.au/JSOP/EMV-JSOP.htm) for guidance on how to place resources requests.

Glossary

AIIMS	Australasian Inter-Service Incident Management System
BOM	Bureau of Meteorology
CERA	Community Emergency Risk Assessment
CFA	Country Fire Authority
DCP	Divisional Command Point
DELWP	Department of Environment, Land, Water and Planning
DHHS	Department of Health and Human Services
EM-COP	Emergency Management – Common Operating Picture
EMLO	Emergency Management Liaison Officer
EMMV	Emergency Management Manual Victoria
EMV	Emergency Management Victoria
EPA	Environment Protection Authority
IC	Incident Controller
ICC	Incident Control Centre
ICP	Incident Control Point
IEMT	Incident Emergency Management Team
IMT	Incident Management Team
JSOP	Joint Standard Operating Procedure
MEMP	Municipal Emergency Management Plan
MEMPC	Municipal Emergency Management Planning Committee
MFEP	Municipal Flood Emergency Plan
NSW	New South Wales
RAC	Regional Agency Commander
RC	Regional Controller
RCC	Regional Control Centre
RDO	Regional Duty Officer
REMT	Regional Emergency Management Team
SA	South Australia
SCT	State Control Team
SERP	State Emergency Response Plan
SES	State Emergency Service
SOP	Standard Operating Procedure
USAR	Urban Search and Rescue
VICSES	Victoria State Emergency Service

Attachments

Attachment 1 – Regional Resources

The following major regional resources are available for use during a storm operation, and are supplementary to unit response resources:

- 1 x Field Operations Vehicle
- 4 x IAC/EMLO IT Kits
- 1 x Logistics Truck (with staging area management equipment)
- 13 x Lighting Towers
- 1 x Sandbag Filling Trailer
- Land Based Swift Water Rescue Team/s
- 13 x Rescue Boats situated at the following locations:
    - Mildura
    - Robinvale
    - Swan Hill
    - Kerang
    - Echuca
    - Rushworth
    - Kyabram
    - Rochester
    - Marong

DELWP and CFA maintain specialist resources that can be utilised by VICSES during a flood operation, including:

- IMT personnel
- Chainsaw Crews
- Health Monitoring Units
- Initial Impact Assessment Teams

The region also holds strategic reserves of sandbags at the following locations (approx. to 1000):

Location	Number x 1,000 (approximate)
Swan Hill Office Store	10
Bendigo Office Store	15
Mildura	5
Swan Hill	5
Kerang	5
Rochester	3
Bendigo	5
Ouyen	6

Other units, in general, hold sandbag quantities >1000.

Attachment 2 – Example of Regional Storm Scenario

At 1300hrs 16 March 2019, BOM issued a severe thunderstorm warning with the potential to produce damaging winds, heavy rainfall and large hailstones over the Northern Country, Mallee, Wimmera and Central districts.

At about 1500hrs, a thunderstorm cell system developed over the Mildura area generating 20 Requests for Assistance (RFAs). At 2000hrs a larger severe thunderstorm developed to the west of the Victorian border and moved slowly eastward with very heavy rainfall, large hail and severe wind. Areas affected include Mildura, Red Cliffs, Merbein, Ouyen and Murrayville.

More than 250 RFAs have come through relating to building damage, trees down and flash flooding, in addition to one RFA for a person trapped in a car by rising water. Requests are still trickling in, however the surge seems to have slowed.

Mildura, Ouyen and Murrayville Units are actively clearing RFAs, with assistance from CFA and DEWLP; however, accurate data collection from the field regarding completion of RFA's is an ongoing issue.

Council and VicRoads crews are also active in the area clearing drains and removing trees from roads. Ambulance Victoria has received a number of calls for injuries sustained during the storm and have reported difficulty accessing casualties due to trees and flooded roads.

Media have begun taking an interest in the storm response activity and are out in the field, and making calls to VICSES and other agencies for the latest information.

Rainfall over the preceding seven days has saturated catchments and filled storage reservoirs. A frontal system delivered 200+mm rainfall across the State approximately three weeks ago, with moderate flooding predicted in approximately five days in the Mildura area. A DCP has been established at Mildura.

Attachment 3 – VICSES Flood Readiness and Activation Trigger Considerations (v 3.0 – 09/17)

VICSES Flood Readiness and Activation Trigger Considerations (v3.0 – September 2017)

STORM READINESS AND ACTIVATION TRIGGER CONSIDERATIONS - V3.0 - SEPTEMBER 2017

Readiness Level	RL 1- LOW TO MODERATE	RL 2 - HIGH	RL 3(A) - VERY HIGH	RL 3 (B) - VERY HIGH	RL 4 - SEVERE	RL 5 - EXTREME
FDI	0 - 11	12 - 24	25 - 34*	35 - 49*	50 - 74	75 - 99
Fire Behaviour	Fires can be easily controlled	Fires can be controlled, expect short distance spotting	Fires can be difficult to control, crown fires may develop in forest.	Fires can be difficult to control, crown fires may develop in forest.	Fires may be uncontrollable and move quickly. Spot fires may occur up to 4km ahead of the fire.	Fires will be uncontrollable, unpredictable and fast moving. Spot fires up to 6km ahead of the fire.
	THUNDERSTORM FORECAST CHART [TFC] issued daily			SEVERE WEATHER INTELLIGENCE BRIEFING [SWIB] issued TUE & FRI		
Storm Prediction or Warning READINESS CONSIDERATION	No Thunderstorms No Severe Weather	TFC show THUNDERSTORMS POSSIBLE No SWW	TFC shows SEVERE THUNDERSTORMS POSSIBLE SWW issued for winds and/or possible heavy rainfall STW issued for wind and/or heavy rainfall and/or hail	Severe Weather Intelligence Briefing (SWIB) colored YELLOW TFC shows SEVERE THUNDERSTORM LIKELY SWW issued for wind and/or heavy rainfall STW issued for wind and/or heavy rainfall and/or hail	SWIB colored ORANGE for winds and rainfall, showing TFC shows SEVERE THUNDERSTORMS LIKELY including potential for LARGE Hail, Damaging Winds, Heavy Rainfall leading to flash flooding SWW issued for Damaging Winds and/or Heavy Rainfall STW issued for wind and/or heavy rainfall and/or hail	SWIB colored RED for Damaging to Destructive Winds and Very Heavy Rainfall TFC shows SEVERE THUNDERSTORMS LIKELY including potential for GAINT Hail, Damaging Winds, Heavy Rainfall leading to flash flooding SWW for damage or destructive winds or heavy rainfall STW - Super Cells possible, Heavy Rain and/or Very Dangerous Thunderstorm warning issued
Storm Behaviour READINESS CONSIDERATIONS	No Thunderstorms No Severe Weather	Wind gusts < 90km/h, rain rates not conducive to flash flooding, small hail (<2cm)	SWIB - 50km/hr+ average winds, gusts reaching 90-100 km/hr for prolonged periods. TFC - Possibility of Thunderstorms, may or maynot include small hail < 3cm. SWW or STW - Chance of flash flooding and damaging winds considered Possible.	SWIB - 60km/hr+ average winds, gusts reaching over 100km/hr (101-109 km/hr) for 6 or more hour period. TFC - Severe Thunderstorms Possible, high possibility of 3 or 4cm hail, wind gusts over 100km/hr. SWW - Heavy Rainfall leading to flash flooding across Districts considered 'Possible' STW - Localised flash flooding rates of >20mm per 30mins likely.	SWIB - 70km/hr+ average winds, DAMAGING gusts reaching over 110km/hr (110-120 km/hr) for 3 or more hour period. TFC - Severe Thunderstorms LIKELY SWW - Heavy Rainfall leading to flash and/or riverine flooding across Districts considered 'Likely' STW - Possibility of hail of 4-5cm, wind gusts over 110km/hr. POTENTIAL for Super Cell, Squall or Tornado. Localised flash flooding rates of >30mm per 30mins likely.	SWIB - Very unstable weather conditions including 80km/hr+ average winds, DAMAGING (120km/hr to DESTRUCTIVE > 125km/hr for 3 or more hour period CERTAIN. TFC - Severe Thunderstorms more LIKELY. SWW - Heavy Rainfall leading to flash and/or riverine flooding across Districts considered 'Very Likely' STW - Super Cells including Hail > 5cm, wind gusts > 120km/hr. Localised flash flooding rates of >40mm per 30mins. Squalls or likely Tornado.
NOTE: ADD 10km/hr to average winds and/or gusts when considering Alpine District predictions and/or warnings						
Storm Activity ACTIVATION CONSIDERATIONS	Local level unit response with less than 10 RFAs	Local level unit response with less than 10 RFAs	Local Unit level response with local agency support METRO 30+ RFA active at each 8-10 Units RURAL 15+ RFA active at each 4-6 Units	Multi-Unit responses with increasing multi-agency responses METRO 250+ active RFA in the region, where multi Units have more than 30 RFAs, ESTA has activated Critical Incident Response Plan (CIRP) Level 1 RURAL 100+ active RFA across the region, where Units have 15+ RFA at more than 5 Units	Multi-Unit response activity with multi-agency support and high level of multi-agency response activity (eg: Fire Alarms) METRO 400+ RFA active across the region, where Units have more than 30 RFAs or ESTA CIRP Level 2, event creation has increased to 2-4 per minute, < 15 calls waiting RURAL 250+ RFA, where multi Units have more than 30+ RFA each	Multi-Unit response and high level of multi-agency response activity with significant impacts across multi municipalities METRO 1000+ RFA across ICC footprint, where Units have more than 60 RFAs or ESTA CIRP Level 2 event creation has increased to more than 4 per minute, 15+ calls waiting consistently RURAL 500+ RFA across ICC footrpint, where multi Units have more than 45+ RFA each
	VICSES - Business As Usual Operations			JSOP 2.03 LINE OF CONTROL		
Readiness (State)	SCC Level White	SCC Level White	SCC Level White/Blue	SCC Level BLUE or When ICC activated	SCC Level ORANGE Multiple ICCs activated or multi region	SCC Level RED Multiple ICCs activated or multi region
	SAC and SDO (monitor)	SAC and SDO (monitor)	SAC and SDO (actively monitoring)	SDO and SAC In Place	SDO and SAC In Place Consider Day/Night	SDO and SAC In Place Day and Night
Readiness & Activation (Regional)	RDO (monitor)	RAC (monitor)	Regional Command IN PLACE	RURAL: Regional Cmd In Place, RC notified METRO - RCC OPEN: with BASE RCT in place	RCC OPEN: RCT in place, some agencies available on immediate recall	RCC OPEN: Full RCT/most REMT In Place
	RAC (aware)	RAC (aware)	RAC/RDO attends Regional Office	Rural - RAC & RDO In Place at Regional Office Metro - RC, RAC, RDO at RCC	RC, RAC and RDO In Place at RCC	RCT, RAC and RDO In Place at RCC
Readiness and Activation (Incident)	RDO (monitor)	RDO (monitor)	RDO - RAC IN PLACE Resource Officer (Stby) Management Support (Stby)	RURAL - BASE IMT (Rostered) METRO - BASE IMT (In Place) Observed activity - BASE IMT (In Place)	RURAL - BASE IMT (In Place), CORE (On Call / Stand-by) METRO - CORE IMT (In Place) Observed activity - CORE IMT (In Place)	RURAL - CORE IMT (In Place), FULL (On Call / Stand-by) METRO - FULL IMT (In Place) Observed activity - FULL IMT (In Place)

Effect	Potential Consequences		
People	Some minor inconvenience around local roads.	Increased number of roads being impacted traffic management plan should be considered.	Significant number of roads impacted traffic management plan is required some major roads closed with tree blockages or flash flooding impacts
Power	Possible power disruptions	Likely short term power disruptions	Power disruptions almost guaranteed likely with potential long term outages.
Health	Little impact expected some local issues might be encountered but managed locally within own facility Plan	Consideration for review and familiarisation with facility Plan - VICPOL and DHHS to review Vulnerable persons list	Highly likely vulnerable people impacted by power outage require relocation . Communities without power for days needing support
Education	Unlikely impact	Some impact expected traffic management plan for school buses should be considered.	Some school and preschools may be impacted by utilities loss and damage to infrastructure and school bus routes closed for period of time
Road Network	Unlikely to impact	Some minor roads may be impacted with possible disruption to critical needs supplies such as milk	Highly likely for roads to be out and egress and access impacted. Major roads potentially cut in some locations traffic diversions in place. Potential rescue of trapped persons in vehicles highly likely. Expected impact on rail routes. Economic impact likely with loss of power and utilities supply for lengthy period.
Public Transport	Limited impact on public transport routes	Impact to public transport routes may occur but likely to be minimal with diversions possible	Public transport impacts will occur with roads and rail lines cut and no alterative route available - significant disruption to people movement likely
Relief and Recovery	Relief and recovery activity unlikely may be some local issues.	Increased potential for relief and recovery activity but likely to be managed locally by LGA with support of DHHS	Formal arrangements put in place for relief and recovery activity Regional Recovery Commander appointed. Health Commander in Place and demands on relief and recovery to be substantial and potentially long term.
Water utilities	Little impact expected some local issues might be encountered but managed locally.	Increased potential but still managed locally. May be minor sewerage overflow issues in isolated areas	Highly likely that some infrastructure will be impacted, water authorities should develop or initiate their plans to address issues. Significant potential for pollutants including sewerage in water and loss of power will exasperate the impacts
Telecommunications	Nil impact	Minimal impact to individual premises only	Significant impact with loss of landlines and mobile powers which will affect peoples capacity to receive warnings and information. Commercial Business impacts with loss of phone services.
Public Events	Maybe cancelled due to weather conditions only	Some public events may need to be cancelled or rescheduled due to safety of patrons either whilst at event or travelling to or from.	Public events impacted likely cancellation of major events due to wind impacts and risk, and potential flooding impact on venue or ability to attend or leave event.
Tourism	Unlikely that event will be impacted but consideration must be given to any event occurring to ensure it is safe to continue.	Potential impact on tourist locations if area not safe to visit or isolated due to road closures.	May impact on high value tourist locations and facilities with long term impacts in the social and economic environment of communities.
Agriculture/Animal welfare	No impact likely with landowners managing any localised issues.	Potential impact with losses to live stock, fencing and crops including high intensive farming of produce and tree farms	Substantial impact to crops, including high intensive produce farming (vegetables and fruit) and tree farms with short and long term impacts due to loss of crops. Economic impact to area.
Remote communities	Inconvenience only	Some minor isolation and loss of utilities of individual properties or remote communities is likely	Community isolation and loss of food/supplies potential with resupply requirements dependant on time of power or access outages
Environmental	Minimal impact	Stream erosion and loss of vegetation around watercourses potential. Minor tree damage	Significant disturbance to vegetation with some areas heavily impacted
Cultural Heritage	Minimal impact likely	Some disturbance along watercourses may occur but likely to be minimal	Potential for impact on historical structures and features.
Public Infrastructure /Essential Community Infrastructure	limited impact	Some disruption to access-Parks and vegetated community areas and infrastructure - Some minor damage of community infrastructure	Significant damage to community infrastructure and community facilities. Long term closure of key community facilities likely
Critical infrastructure	Nil impact	May require some preparatory work and discussion with owner of infrastructure	Significant work likely to be required to protect critical infrastructure - Contingency plans put in place if lose of the infrastructure occurs

Regional Agency Commander (VICSES) provides advice to the Regional Controller re: forecast and consideration for varying the actual number, distribution and level of IMT required.