

Mid West (Grampians) Region Emergency Response Plan



Storm Sub Plan



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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

Version Control

Title	Version Date	Nature of amendment
Peter Keppel	V1.0 June 2015	Final document
Clare Mintern	V2.0 March 2020	New template; incorporated input/feedback; final version



Grampians Region Emergency Response Plan – Storm Sub-plan Certification

The Grampians Region Emergency Response Plan – Storm Sub-plan deals with response to storm incidents within Grampians area of responsibility.

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Region to effectively and efficiently respond to future emergencies caused by storms, and will remain current until rescinded by authority of the Victoria State Emergency Service Chief Officer Operations.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

Tim Wiebusch

Chief Officer Operations

This plan is produced by Victoria State Emergency Service 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.

Victoria State Emergency Service 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 Grampians Region:

Assistant Chief Officer / Regional Manager – Grampians Region

Victoria State Emergency Service

352 Dowling Street, Wendouree VIC 3355

Email: Midwest@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.



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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 Grampians Region.

1.2 Objective

The objective of the Grampians 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 Grampians Region, in order to reduce the impact and consequences of these events on the community, infrastructure and services.

1.3 Scope

This Grampians 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 Grampians 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) contains policy and planning documents for emergency management in Victoria, and provides details about the roles different 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 Grampians Region Emergency Response Plan (yet to be developed) will detail specific arrangements for the management of emergencies within the Grampians Region. This plan has been developed as a subordinate plan of the Grampians 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 Grampians 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 will include severe flooding, flash flooding and storm surge for areas prone to coastal flooding. For arrangements for the management of flooding, refer to the State Emergency Response Plan – Flood Sub-plan and Grampians 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 are currently under development by the Department of Health and Human Services (DHHS) and the Environmental Protection Agency (EPA).

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 Response Arrangement (USAR)
- Flood response – State Emergency Response Plan – Flood Sub-plan, and Grampians Region Emergency Response Plan – Flood Sub-plan.

1.8 Exercising and Evaluation

This plan will be exercised within one year from the date of approval and once every three years thereafter as part of a phased cycle. A Region Storm Scenario has been created to support this function available in Attachment 1 – Region Storm Scenario. The exercise 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 within the Grampians 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 Grampians Region

2.1 Region Description

The Grampians Region of the Victoria State Emergency Service (VICSES) covers 48,620 square kilometres, the second largest fairer government region in the State, encompassing many communities that are culturally rich and diverse.

Geographically this area is diverse and includes;

- Encompasses more than 200,000 people from over 50 nationalities.
- Approximately 100,000 private dwellings
- Flooding within the Grampians Regional may impact the State of Victoria's economic, business continuity and possible future development opportunities.
- Includes the Grampians National Park, over 1 million tourists visiting per year.
- Most of the State's grain growing production.
- Borders South Australia

The Region contains eleven local government areas, including West Wimmera, Hindmarsh, Yarriambiack, Horsham, Northern Grampians, Pyrenees, Ararat, Hepburn, Ballarat, Moorabool and Golden Plains. Refer to map below of the Grampians Region.

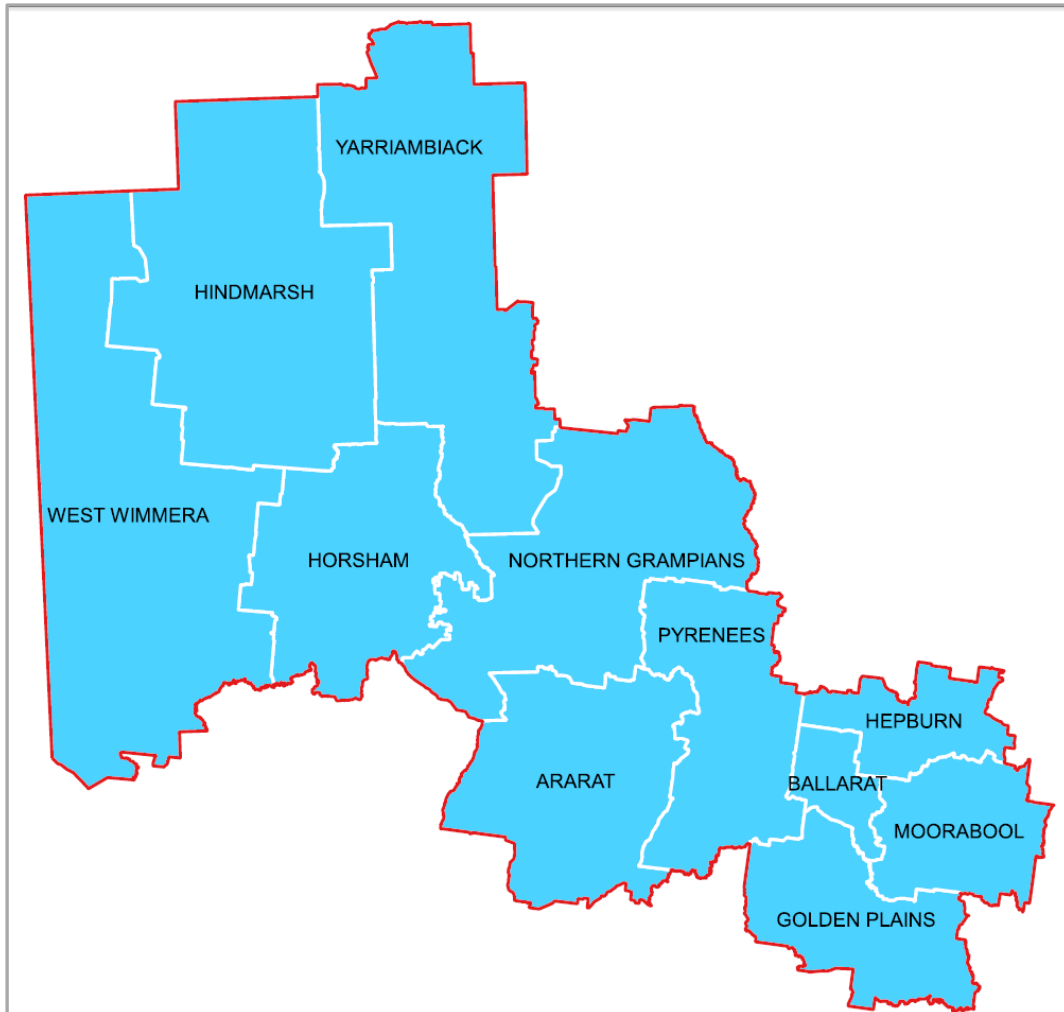


Figure 1. Grampians Region local government areas.

The Grampians Region takes in six Bureau of Meteorology weather districts; Mallee, Wimmera, South West, Northern Country, Central and North Central and four Catchment Management Authorities, Glenelg Hopkins, Corangamite, Wimmera and North Central.

Literally hundreds of storms occur each year in Victoria. In Australia, severe thunderstorms are defined as those that produce any of the following:

- Thunderstorms, known as events which are transient, sometimes violent storm of thunder and lightning, often accompanied by rain and sometimes hail.
- [Hailstones](#) with a diameter of 2cm or more
- Gale force winds (between 52km/h and 102km/h) or greater
- [Flash flooding](#)
- [Tornadoes](#)
- Wind Sheer

For information on Flooding, refer to VICSES Grampians Region Flood Response Plan.

Figure 2 shows the monthly distribution of severe thunderstorm events according to the severe phenomenon observed. The graph shows that most severe thunderstorms occur between October and April. January is the most active month for Severe Thunderstorms followed by December then November. The number of events when large hail or heavy rainfall is reported follows this overall trend closely with very few events during the winter months. Conversely, the number of tornado events is quite evenly distributed throughout the year. This could be due to the fact that tornados can form in cold-air mass thunderstorms as well as in warm-air mass super cell thunderstorms.

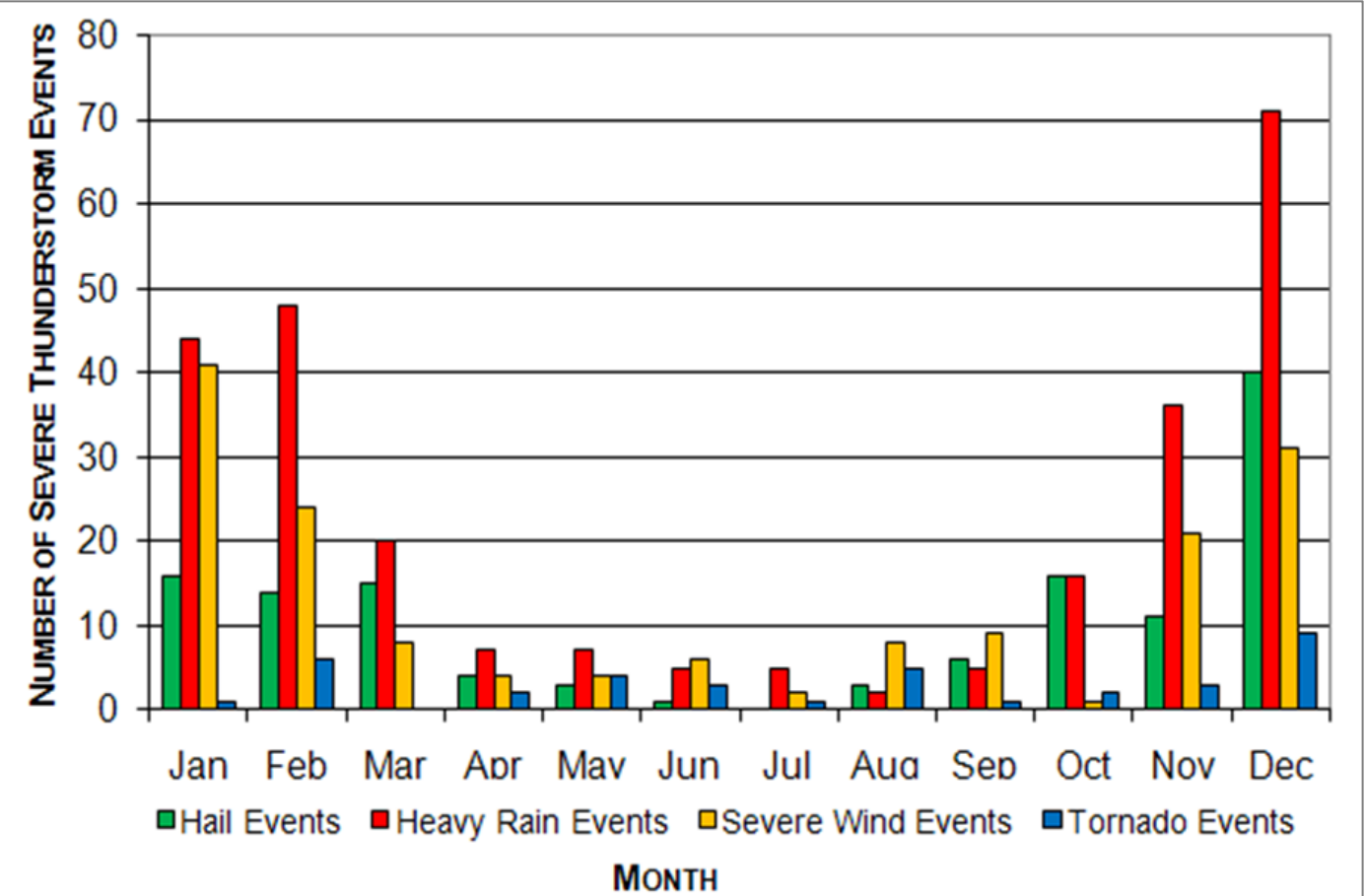


Figure 2. Monthly distribution of reported Severe Thunderstorm Events in Victoria (BOM data from 2000 to 2010).

Grampians Region experiences on average at least one large storm event each year. Table 1 indicates that from 2009-2010 there has been a significant jump in wind related RFAs and the number of storm events managed by Grampians Region. Prior to 2009-2010 the Region experienced an average of one large storm event (with over 80 RFAs in a day), and less than 500 RFAs related to wind each year. However since 2009-2010 the frequency of storm events have increased to nearly four events and around 1,000 RFAs per year.

As an indication of storm intensity and frequency, Grampians Region has been impacted by ten of the last twenty four major tornadoes to impact Victoria. An analysis of significant days for the Ballarat Unit over the last eight years shows that, as for Victoria, most storm events occur in spring and summer.

Table 1. Grampians Region Storm RFA summary.

Year	Event region		Significant days	
	Mid West	Ballarat	Grampians Region (>80 RFAs in a day)	Ballarat Unit (greater than 30 RFAs in a day)
2006-07	473	250	1	3
2007-08	506	317	1	3
2008-09	461	246	1	1
2009-10	949	490	3	4
2010-11	2887	1284	9	7
2011-12	907	447	2	2
2012-13	1157	764	4	4
2013-14	870	370	2	1

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.

Severe weather events affecting land-based communities are generally divided into two broad categories:

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

Warnings are issued by the Bureau of Meteorology for weather events that may produce severe phenomena.

2.2.1 Severe Weather and Severe Thunderstorm

In Australia, a severe thunderstorm is defined by the Bureau of Meteorology 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, 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 to severe weather include land gales and squalls, heavy rain leading to flash flooding and blizzards.

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.

2.2.2 Severe Thunderstorm Climatology

Severe thunderstorms generally develop within the region or come in from the North or West. Those that develop within the region often come from recent fire areas or build in the area between the Grampians and Ballarat. However, severe thunderstorms and tornados are often experienced in the Wimmera but the damage is more likely to crops than homes. Some of these severe storms can travel the length of the region and impact on the Melbourne Metropolitan area.

There is a history of micro bursts, hailstorms, tornados and flash flooding throughout the region.

2.2.3 Severe Weather Climatology

With severe weather coming in from the south there is a natural flow path from the coast to the Ballarat area. The Grampians National Park deflects severe weather coming from the south. During the warmer months the weather pattern from the north sees severe weather coming in from the northern plains and then as the changes come through they can be associated with severe weather from the south west or east with high damaging winds.

After years of drought the region can experience severe dust storms that rise in the Mallee or Wimmera and have been known to travel across the State coating everything with dust and reducing daylight.

2.3 Regional Resources

Key regional resources that are used for storm response include those held by VICSES in various locations throughout the region and many resources held by other agencies. Some VICSES personnel are trained and equipped to deal with damaged buildings and the removal of trees that are resting on house roofs. This specialist area requires the setup of a Safe Working at Heights System (SWAHS).

CFA has tankers equipped with chainsaws and operators to assist storm clean up around homes and streets. In some locations CFA have platform ladders that are often used to manage multi storey buildings and damaged advertising signs etc.

DELWP has four wheel drive vehicles with chainsaws and operators to assist with tree removal on roads and parks.

A full list of regional resources can be accessed in Attachment 2.

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 locations in the Grampians Region is provided in Attachment 3 and Attachment 4 is a map of VICSES General Response Boundaries for Grampians Region.

These are accessible via Emergency Management Victoria – Common Operating Picture (EM-COP) for registered users.

3. Consequences

3.1 Possible Storm Consequences

The Grampians 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 as a result of 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 amongst other impacts. Damage and flooding of road infrastructure may result in isolation of properties and/or communities.

Information on building critical infrastructure resilience can be found 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

While the Grampians Region has a long history of frequent storm events occurring, the most severe storm event occurred in January 2011. This extreme rainfall event caused unprecedented flash flooding in the Grampians Region significantly impacting most towns. Halls Gap recorded a total January rainfall of 297mm, with 146.6mm falling on the 14th of January (Water Technology 2017). The damage caused by this rainfall event for Halls Gap and the Grampians National Park is estimated to cost over \$400 million (Federation University 2014). Refer to the Halls Gap flood photos below.



Figure 3. Flash flooding impacting the Brambuck Cultural Centre during the January 2011 event, Halls Gap.



Figure 4. Flash flooding impacting the Stoney Creek Shopping Complex during the January 2011 event, Halls Gap.



Figure 5. Flash flooding impacting the Parks Victoria office buildings during the January 2011 event, Halls Gap.

The tables below provide a summary of historic storm events that have occurred within the Grampians Region.

<http://www.bom.gov.au/australia/stormarchive/>

Table 2. Tornado and wind event history.

Year	Locality impacted	Description
1997	Lake Fyans	Tornado.
1997	Horsham	118km/h wind, hail, tornado.
2002	Ballarat	Tornado.
2004	Grampians NP	Left a 10ha patch of earth with no vegetation.
2010	Trawalla	Hundreds of trees, tandem trailer moved.
2011	Ballarat	Magpie Valley tornado.
2012	Stawell	Black Range.
2013	Ballarat	Small tornado in Ballarat North.
2013	Ararat	500m path of destruction along McLellen.
2015	Creswick	Northwest of town.
2015	Daylesford	Eganstown to Daylesford.

Table 3. Hail event history.

Year	Locality impacted	Description
1989	Ballarat	Hail damage to cars and homes. Over \$20million damage mainly in the CBD area (1989 figures, closer to \$200 million now). Local car dealers were hit hard and for many years they moved their entire stock to areas undercover such as the showgrounds upon the issuing of a hail warning.
1993	Ararat	5cm hail.
1993	Creswick, Ballarat, Meredith	3cm hail and 25mm of rain fell in 30 minutes.
1996	Edenhope	3cm hail.
1997	Halls Gap, Ararat	5cm hail.
2010	Warracknabeal	Hail and water damage.
2011	Ballarat	3cm hail.
2012	Ballarat	Up to 12cm hail.

Table 4. Flash flood event history.

Year	Locality impacted	Description
1988	Ballarat	Flooding along Gnarr Creek, Canadian Creek, Redan Creek, Winter Creek and Yarrowee River with a significant number of buildings inundated in the CBD. Over 358 buildings were impacted by flooding.
1991	Ballarat	76mm of rain fell in 2 hours. Flooding in Ballarat (and Melbourne) affected 20,000 people, injuring 5 and rendering 200 homeless. Flooding in Ballarat was most severe in Gnarr Creek with the Lydiard Street area recording the highest number of buildings impacted. Businesses impacted by flooding include a newspaper building and several car yards. Floodwater was over one metre depth in the Bridge Mall and Lydiard Street. A search was undertaken for persons feared drowned in rising waters of the Yarrowee River. Roads flooded in CBD, Main Road and eastern parts of the city.
1991	Warracknabeal	2cm hail and 36mm of rain caused extensive damage to cars, buildings and roads.
1992	Ballarat/ Beaufort	2.5cm hail and 16mm of rain fell in 15 minutes caused extensive damage to cars, buildings and roads..
2003	Ballan	60mm of rain fell in 30mins caused extensive damage.
2004	Horsham	62mm of rain fell in 30mins causing extensive damage to buildings, roads and other infrastructure.
2010	Creswick	80mm of rain fell in 2 hours, many homes were flooded.
2011	Ballarat	Significant flooding in Miners Rest, Delacombe, Alfredton, Burrumbeet, Learmonth and Ballarat CBD.

2011	Halls Gap	This was the largest flood event on record. Up to 300mm of rain fell over 4 days flooding more than 20 buildings, including two caravan parks, the Stoney Creek Shopping Complex and the Brambuk Cultural Centre. The damage caused by this event is estimated to cost over \$400 million.
2011	Stawell	Flooding caused damage to over 100 buildings.
2011	Natimuk	Over 100mm was recorded in the upper Natimuk Creek Catchment, causing extensive damage to over 21 buildings, roads and other infrastructure.
2011	Rupanyup	149mm of rainfall fell over 3 days caused extensive damage to buildings in Dyer Street. Several buildings in Cromie Street were close to being flooded over floor.
2011	Warracknabeal	151mm of rainfall was recorded over 5 days, causing extensive damage to a large number of buildings, roads and other infrastructure. Buildings impacted by flash flooding were located in Lyle Street, Borung Highway, Gardiner Street, McIntyre Street and Asquith Avenue.
2011	Great Western	91mm of rain fell on the 12 th of January causing Concongella Creek to flood. Flooding impacted 6 buildings and caused many homes to be isolated. Floodwater was 1m deep across the Western Highway.
2011	Beaufort	96.8mm fell in one day, this was the highest rainfall recorded at Beaufort for 120 years. This flood event caused considerable damage to buildings, roads and bridges, including the Pyrenees Shire Offices (Lawrence Street), Beaufort Ambulance Station (Havelock Street) and the Hains Windscreen building (Neill Street). Over 70 properties were impacted by flooding, 39 buildings inundated over floor. The Beaufort Lake dam overtopped by around 300mm during the event which led to some concerns regarding possible failure. Flooding cut access to the Western Highway.
2011	Dadswells Bridge	Flooding cut access to the Western Highway.

Towns known to have high flash flood risk are shown in the map below. This map was developed using building damages recorded for historic flash flood events.

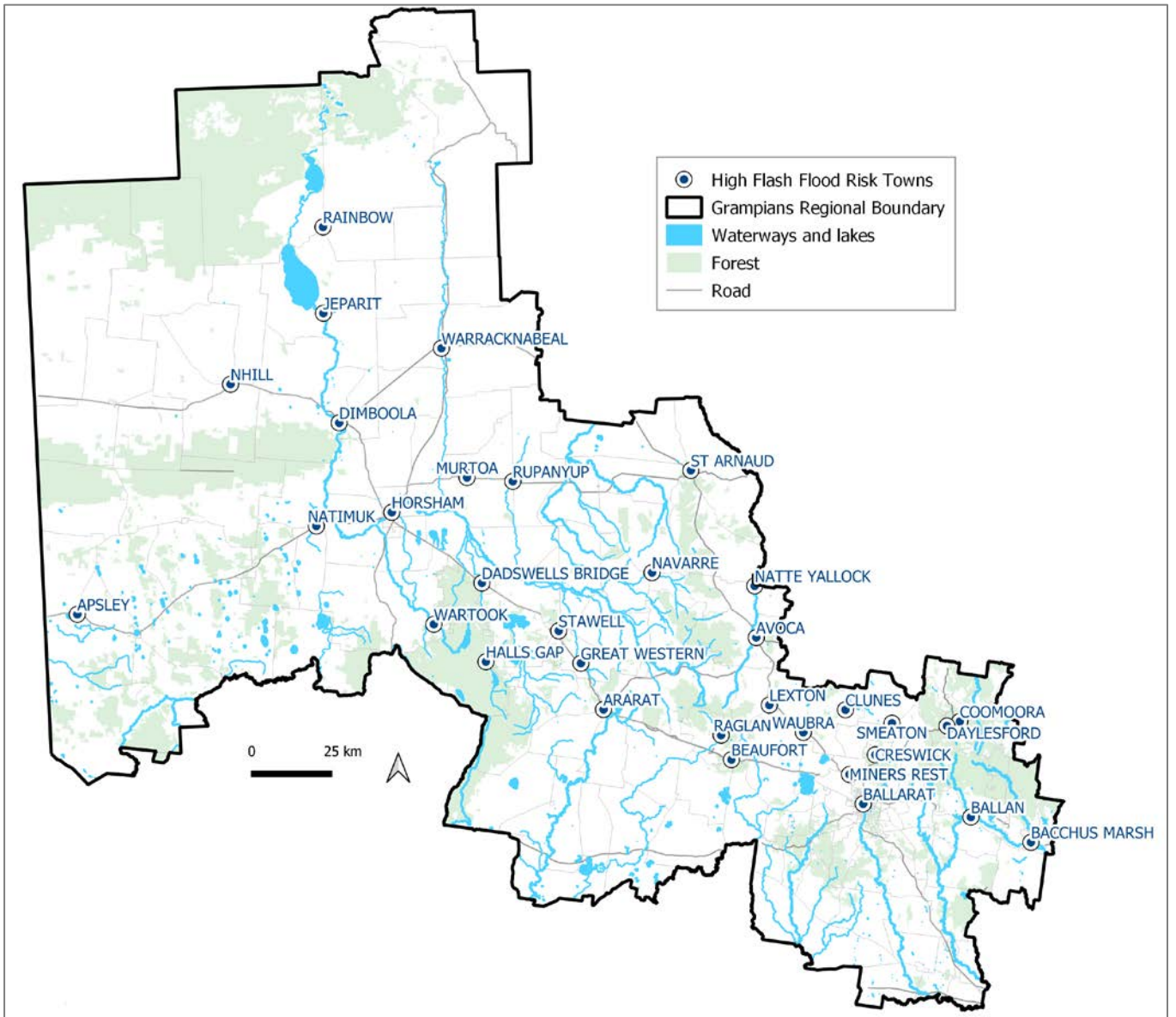


Figure 6. Towns with high flash flood risk within the Grampians Region.

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. Information can be found at www.ses.vic.gov.au/get-ready

4.2 Forecasting and Warning Services

4.2.1 Forecasting Services

The Bureau of Meteorology has a requirement under the Meteorology Act 1955 to warn the community and provide the following services to the Victoria State Emergency Service. These services are outlined in detail in the State Emergency Response Plan – Storm Sub-plan:

- **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, the Victoria State Emergency Service 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 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.

Programs to build resilience in Grampians Region include local engagement activities and initiatives including VICSES partnership with Red Cross to deliver the Pillowcase project – expanding the resilience of primary aged children.

4.5 Household and Business Plans

The Emergency Management Commissioner advises that every household and businesses should have a written emergency plan. Information on the development of household and business plans can be found at www.ses.vic.gov.au

The Grampians Region also supports local Caravan Park owners prepare for emergencies by supporting use of the online planning tool which can be found at www.ses.vic.gov.au/get-ready/caravan-park-information

4.6 Community Safety Advice

Victoria State Emergency Service provides advice to community in the form of key safety messages for storm including advice for safe evacuation. A full list of community safety advice messages can be viewed online via EM-COP, located in the IMT Toolbox.

5. Managing a Storm Event

5.1 Roles and Responsibilities

Roles and responsibilities of agencies involved in responding to storms are detailed in the State Emergency Response Plan – Storm Sub-plan.

5.2 Concept of Operations

The concept of operations for responding to storm is detailed in the State Emergency Response Plan – Storm Sub-plan.

5.3 Escalation and Notification

The Bureau of Meteorology publishes Severe Weather and Severe Thunderstorm Warnings, as detailed in section 4.2 Storm Forecast and Warning Service, on their public website www.bom.gov.au and provides them to pre-identified agencies, organisations and media outlets, including pager and email warning messages to Victoria State Emergency Service at the State and Regional Level.

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

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

5.4 Strategic Response Planning

The actions listed below are the responsibility of Victoria State Emergency Service at the regional and State tiers. Responsibility for these actions may transition to the Regional Controller 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 5 – IMT Readiness Levels – Storm.

On receipt of advice from the Bureau of Meteorology of the potential for storm activity, the RAC will undertake strategic level planning in anticipation of an event, in alignment with Victoria State Emergency Service severe weather triggers. Key considerations will include:

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

5.5 Cross Border Arrangements

For the Grampians Region, cross border mutual arrangements exist with VICSES and SA Country Fire Service (CFS) and SA SES in the neighbouring area of South Australia. This is for road crash rescue response, all hazard response. An annual cross border liaison meeting is held with all emergency service organisations to discuss cross-border issues.

For storm incidents within the Victoria / South Australia central border area the Units will be deployed to support areas within their border areas, not cross border. Information is shared across border mainly to assist South Australia SES to prepare for flood risk for creeks that may impact on Naracoorte.

During significant storm events, it is common for additional Units to be deployed to Metro, Barwon South West, Loddon Mallee Regions, with reciprocal arrangements for Units deployed to support Grampians Region.

5.6 Regional Control Centre

The Grampians Region Response Plan will outline pre-determined facilities that are suitable for the establishment of a Regional Control Centre for the management of emergency events, including for storm response, in Grampians Region. These include:

- **Ballarat, 19 Learmonth Road, Wendouree, Facility owner CFA, contact Stephen Walls, Regional Commander, CFA, 0417 342 851**

A map of RCC footprints can be viewed in Attachment 6 – Regional Control Centre Footprint Map.

5.7 Incident Control Centres

Incident Control Centres (ICCs) locations that have been pre-determined for storm response are detailed in the table below.

Table 5. Incident Control Centres.

Location	Local Government Area within footprint
Horsham ICC, 110 Natimuk Road, Horsham	West Wimmera, Hindmarsh, Horsham, Northern Grampians, Ararat, Yarriambiack.
Ballarat ICC, 25 Vickers St, Sebastopol	Pyrenees, Ballarat, Moorabool, Golden Plains, Hepburn.

A map of ICC footprints is available in Attachment 7 and online via EM-COP.

5.8 Divisional Command Points

Facilities suitable for use as Divisional Command Points (DCPs) are listed in the table below. Also refer to the Divisional Command Location map in Attachment 7.

Table 6. Divisional Command Points.

Location	VICSES Units within footprint	Local Government Areas
Ballarat, SES, DCP	Ballarat Unit	City of Ballarat
Daylesford, SES, DCP	Hepburn Shire Unit	Hepburn Shire Council
Ararat, SES, DCP	Ararat Unit	Ararat Rural City Council
Stawell, SES, DCP	Stawell Unit	Northern Grampians Shire Council
Bacchus Marsh, CFA, LCP	Bacchus Marsh Unit	Moorabool Council
Ballan, CFA, LCP	Bacchus Marsh Unit	Moorabool Council
Linton, CFA, LCP	Ballarat Unit	Golden Plains Shire Council
Rokewood, CFA, LCP	Lismore Unit	Golden Plains Shire Council
Beaufort, CFA, LCP	Ballarat Unit	Pyrenees Shire
Elmhurst, CFA, LCP	Ararat Unit	Ararat Rural City Council
Avoca, CFA, LCP	Maryborough Unit	Pyrenees Shire
St Arnaud, CFA	St Arnaud Unit	Northern Grampians
Willaura, CFA	Ararat Unit	Ararat Rural City Council
Warracknabeal, CFA	Warracknabeal Unit	Yarriambiack
Hopetoun, CFA	Warracknabeal Unit	Yarriambiack
Rainbow, CFA	Nhill Unit	Hindmarsh
Nhill, CFA	Nhill Unit	Hindmarsh
Edenhope, CFA	Edenhope Unit	West Wimmera Shire
Harrow, CFA	Edenhope Unit	West Wimmera Shire

5.9 Regional Resource Requirements

Likely resource requirements for significant storm events within Grampians Region ICC footprints are detailed in Attachment 1.

References

Federation University, 2014, Understanding the 2011 Grampians Natural Disaster, addressing the risk and resilience Executive Summary (report link: <http://maynard.cerdi.com.au>).

Water Technology, 2017, Halls Gap Flood Study Report (report link: www.wcma.vic.gov.au).



Attachments

Attachment 1 – Region Storm Scenario

A Region Storm scenario has been developed to support periodic training requirements (outlined in section 1.8) provides opportunity to document anecdotal and/or known storm impacts based on historic events. This scenario also provides an indication of the resource requirements and associated gaps for operational response.

The below scenario is based on a likely storm scenario in the Grampians Region.

Storm Scenario – Grampians Storms

Severe storms have been predicted across the Region and it the mid-afternoon when several severe storms are noticed heading in a south easterly direction. The first storm hits the Stawell and Halls Gap area with heavy hail and rain. 90mm of rain falls in the Halls Gap area. This triggers the landslide potential in Halls Gap and the rainfall means the Stoney Creek rises rapidly creating a flood risk to the shops, caravan parks and visitors in the area. Landslides, swollen creeks and closed walking tracks isolate tourists and create risk to life for those caught in the area. The Halls Gap - Dunkeld Road is closed in several places and the tourist road to Wonderland is also closed. People are isolated and some will be stuck on mountain walking tracks. Debris flows and landslides start to damage walking tracks and several large boulders the size of cars start falling down the escarpment towards buildings.

The second severe storm has started a little higher to the north of the Grampians Region and has very high winds, hail and heavy rain. This storm hits Ballarat and Creswick. 90mm of rainfall, tornado winds and large hail hit different parts of the urban areas. Rainfall quickly fills the creeks and retarding basins, causing floodwater to break the banks of surrounding waterways. Creswick sees low areas along the Creswick Creek become threatened by the rising floodwater requiring evacuations and road closures. Waterways surrounding Ballarat cause flooding in the centre of Ballarat. The capacity of the Yarrowee River and Gnarr Creek underground pipes beneath the Bridge Mall are exceeded by the floodwater causing floodwater to come up through the drains and flood the Bridge Mall shops and businesses. The areas of Ballarat North, Ballarat East and Sebastopol are likely to have wind damage at the same time. In East Ballarat the Canadian Creek and its tributaries begin to flood cutting access to Main Road and other roads adjacent to waterways in the area.

Resource Requirements

The below resource requirements have been identified based upon the above storm scenario resulting in significant impacts across Halls Gap, Stawell, Beaufort, Creswick, Clunes and Ballarat locations and impacting approximately 150,000 people. The event which the scenario is based could last for approximately several hours but is likely to have impacts lasting longer than several days. At the peak of the event 4000 people and 1000 properties maybe threatened. Ballarat has over 8,700 properties that can be impacted by flash flooding.

Core Capability	Human Resources	Equipment
Swift Water rescue	Ballarat CFA & SES, Bacchus Marsh SES	Swift Water access kits
Road Closures	Councils, Parks Victoria, Police	Signs and personnel
Safe Working at Heights System for building damage	SES, CFA	Storm response kit
Tree safety – clearance and assessment	SES, CFA, FFMVic, Councils	Chainsaws etc
Evacuations	VICPOL, Councils	Relief Centres
Building damage assessments	Councils, CFA	Building inspections
Infrastructure damage assessments	Councils, VicRoads, Catchment Management Authorities, Water Authorities.	Bridge and waterway inspections
Water and Sewerage	Water Authorities.	Reinstating services
Debris removal	Council	Loaders and trucks

Resources listed are those that would be required at the peak of an event, and would represent the resources of all agencies with responsibilities under the State Emergency Response Plan – Storm Sub-plan.

For such an event Divisional Command locations include, Stawell SES, Wendouree CFA, Ballarat SES, ICC at Ballarat and boundaries that are shown in Attachment 7 – Division Command Location Map.

Attachment 2 – Regional Resource List

Resources: The Grampians Region has a range of equipment and resources available for flood response. This equipment is deployed according to situation, Unit roles and strategic location.

VICSES Unit Resources

Resources and equipment is available at 14 VICSES Units within the Grampians Region.

VICSES Sandbag Bulk Locations:

Ballarat, Stawell and Dimboola have 15,000 to 20,000 sandbags in storage. Other VICSES Units have 2,000 to 4,000 sandbags in stock; refer to sandbags available at each Unit location in the list below.

Unit Name	Primary Contact Person	Number of sandbags
Ararat	Unit Duty Officer	2600
Bacchus Marsh	Unit Duty Officer	2500
Ballarat	Unit Duty Officer	18500
Dimboola	Unit Duty Officer	13000
Dunmunkle	Unit Duty Officer	
Edenhope	Unit Duty Officer	2000
Goroke	Unit Duty Officer	1000
Hepburn	Unit Duty Officer	1000
Horsham	Unit Duty Officer	4000
Kaniva	Unit Duty Officer	1500
Nhill	Unit Duty Officer	2000
St Arnaud	Unit Duty Officer	1250
Stawell	Unit Duty Officer	24000
Warracknabeal	Unit Duty Officer	750
MW RHQ	MW Regional Duty Officer	5500

Sandbags can be rapidly sourced through the ICC’s from the VICSES Logistics Centre.

Rescue Boats:

A number of VICSES rescue boats for flood response are available across the region and can be quickly deployed to the required location. Consideration should be given to the type of flood and the expected conditions and uses for boats when deploying this resource. Regional Rescue Boat Locations:

Unit Location	Rescue Boat Type	Rescue Boat Length
Hepburn	Inflatable	4.2m
Nhill	V hull aluminium	5.5m
Wendouree	Inflatable	4.2m
Ballarat	V hull aluminium	5.5m
Ballarat	Inflatable	4.2m
Bacchus Marsh	Inflatable	4.2m
Horsham	V hull aluminium	4.2m
Ararat	Semi Rigid Inflatable	4.6m
Stawell	V hull aluminium	5.0m

A list of VICSES satellite phones available within the Grampians region is provided below.

VICSES Communications	
Resource Type	Location
Satellite phone - 0147 186 004	Wendouree
Satellite phone - 0417 184 274	Stawell
Satellite phone - 0147 186 005	Horsham

All requests for such resources should be made via the relevant Regional Agency Commander. In addition to the unit resources listed above the following VICSES regional strategic resources and composite teams are available.

- 1 x Mobile Command Vehicle
- 1 x Logistics Truck (With staging area or base camp equipment)
- 5 x Lighting Towers
- 1 x Sandbag Filling Trailer
- Land Based Swift Water Rescue Team
- Health monitoring units – air quality (EPA).

CFA and DELWP maintain specialist resources that are able to be utilised by VICSES during flooding, including:

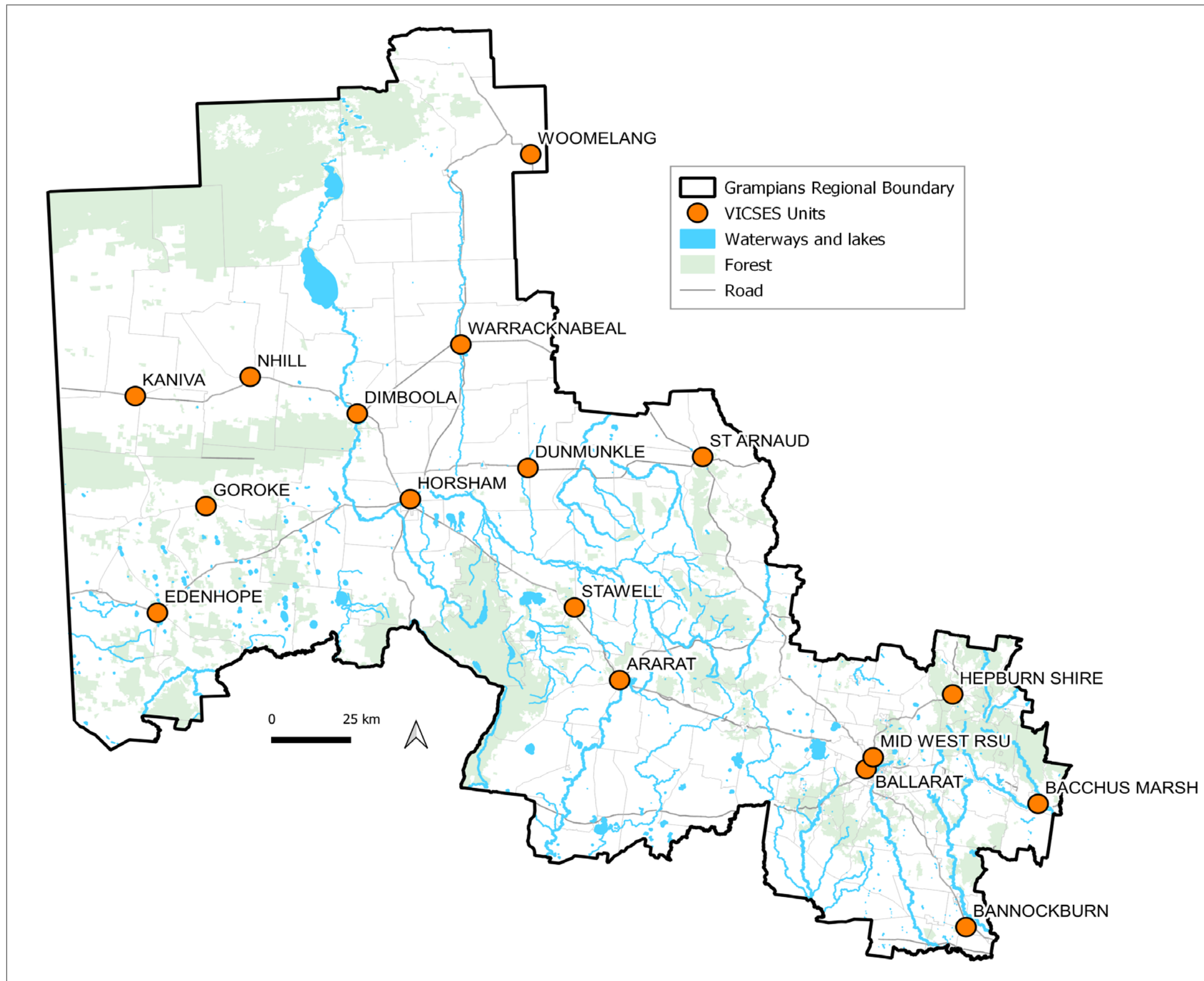
- IMT personnel
- Chainsaw Crews
- Arborists
- Initial Impact Assessment Teams
- Base Camp Teams
- Staging Area Team at Ballarat
- Mobile communication vehicles at Wendouree and Horsham

A detailed list of additional resources available within the Grampians Region is provided below.

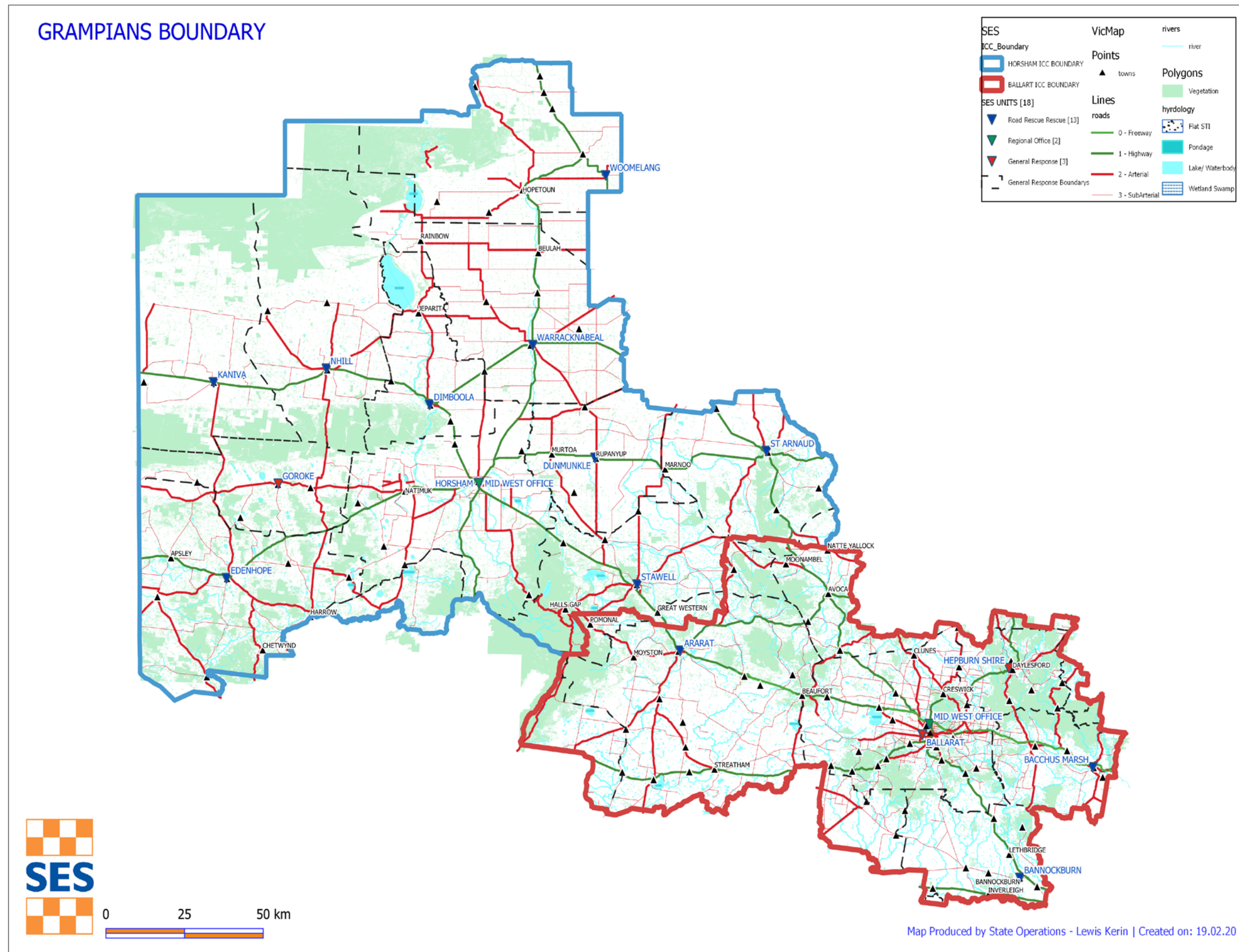
Grampians Regional Resource List

No	Unit	Unit No	Heavy Rescue	Medium Rescue	Light Rescue	Transport 4WD	Storm trailer	Community Education Trailer	Welfare Trailer (Kitchen)	ATV (All Terrain Vehicle)	Sandbag Filling Machine (hopper)	Rescue Boat	Land Based Swift Water	High Angle Rescue	Lighting Trailer	Litter Mules	Motorbikes	EPA Air Monitoring	Logistic Truck	USAR Trailer	Mobile Control Vehicle	Fork Lift	Handheld Radio's	Staging Area Vehicle	Staging Radio's RDO Kit	Mass Casualty Cache	Portable Radio's	Satellite Phone	EMLO Laptop Kit
1	Ararat	770	1		2	2						1	Y	1															
2	Bacchus Marsh	771	1		1	2	1					1	Y		1	1	4												
3	Ballarat	772		1		3	2		1			2	Y		1	1	2	1											
4	Ballarat RSU	773																1									3		
5	Dimboola	774	1			1	1							1															
6	Dunmunkle	780		1		1	1																						
7	Edenhope	775	1			1	1							1															
8	Goroke	776				2	1																						
9	Hepburn	786		1		2	1					1			1														
10	Horsham	777	1			2	1					1					1												
11	Kaniva	778	1			2																				1			
12	Nhill	779	1			1	1																						
13	St Arnaud	781	1			1	1																						
14	Stawell	782	1			3	1	1			1	1	Y		1	1	1		1							1			
14	Warracknabeal	783	1			1	1																						
15	Mid West Ballarat	784	1			1		1				1								1	1	2	1	1	6	1			
16	Mid West Horsham	787				1		1														2				1	1		
TOTAL			11	3	3	26	13	3	1	0	1	8	4	1	2	7	3	6	3	1	0	1	1	4	1	1	6	4	4

Attachment 3 – Grampians Region SES Unit Map



Attachment 4 – Grampians Region General Response Boundaries



Attachment 5 – IMT Readiness Levels – Storm (JSOP 2.03)

JSOP 2.03 – Incident Management Team (IMT) Readiness Arrangements

Schedule 5

IMT Readiness Levels – Storm

To determine the readiness level required, more than 50% of an ICC footprint is predicted to experience one or more of the prevailing weather behaviours, generally the primary ICC will be placed in readiness. The location of the ICC will be determined based on the forecast risk. The RC may vary the actual number, distribution and level of an IMT from this schedule in order to manage local risks, as per section 15 of this JSOP.

IMTs should be in place as advised by the Regional Controller (RC) based on the risk, indicatively 2 hours before the predicted impact of the forecast in the ICC footprint.

Where an IMT manages more than one ICC footprint, the RC in consultation with the State Response Controller (SRC) will determine if another location should be used by the IMT based on risk and consistent with the Regional Storm Response Plan and the SES Readiness and Activation considerations. Operational IMTs can be used for readiness, if they have the capacity to manage new emergencies in the initial stages.

In addition to this schedule, the SRC may request a RC to form a Reserve IMT for deployment within a region or to support another region.

In consultation with the SRC, a RC will advise when an IMT can deactivate or stand down the preparedness level.

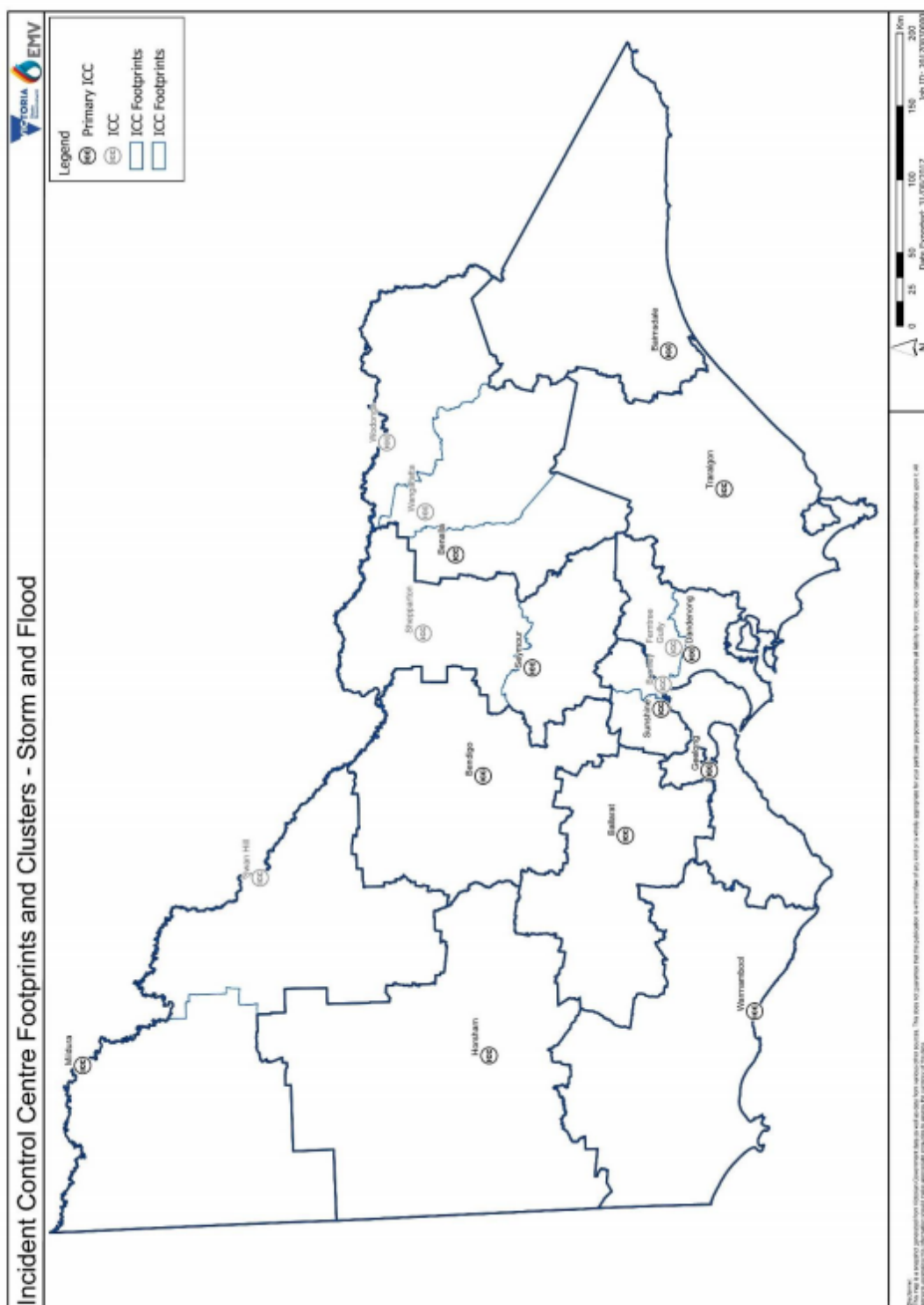
Region	Primary ICC	ICC Cluster	Storm Behaviour *			
			Wind avg	> 60 km/hr	> 70 km/hr	> 80 km/hr
			Wind gust ³	101-109 km/h	110-120 km/h	> 120 km/h
			Rain	>20mm/30min	>30mm/30min	>40mm/30min
			Hail	3 or 4 cm	5 cm	≥ 5cm
				Very High (high end)	Severe	Extreme
Loddon Mallee	Bendigo	Bendigo		Base (I)	Base (I) Core (C)	Full (I)
	Mildura	Mildura		Base (C)	Base (I) Core (C)	Full (I)
		Swan Hill				Core (I) Full (C)
Grampians	Ballarat	Ballarat		Base (I)	Base (I) Core (C)	Full (I)
	Horsham	Horsham		Base (C)	Base (I) Core (C)	Core (I) Full (C)
Barwon South West	Geelong	Geelong		Base (I)	Base (I) Core (C)	Core (I) Full (C)
	Warrnambool	Warrnambool		Base (C)	Base (I) Core (C)	Core (I) Full (C)
North West Metro	Sunshine	Sunshine		Base (I)	Core (I)	Full (I)
		Burnley				Core (I) Full (C)
Eastern Metro	Dandenong	Ferntree Gully		Base (I)	Core (I)	Core (I) Full (C)
Southern Metro		Dandenong				Full (I)
Hume	Benalla	Benalla		Base (I)	Base (I) Core (C)	Full (I)
		Wodonga				Core (I) Full (C)
		Wangaratta				Core (I) Full (C)
	Seymour	Shepparton		Base (C)	Base (I) Core (C)	Full (I)
		Seymour				Core (I) Full (C)
Gippsland	Traralgon	Traralgon		Base (I)	Base (I) Core (C)	Full (I)
	Bairnsdale	Bairnsdale		Base (C)	Base (C)	Core (I) Full (C)

³ For Alpine areas of Hume and Gippsland regions, add 10 km/h to the specified average wind and or wind gusts. Readiness is based on 50% of the relevant ICC footprint being affected.

* A variety of products such as Severe Weather Intelligence Brief, Thunderstorm forecast and Severe Weather Warnings will need to be used to identify the storm behaviours.

Schedule 4

ICC Footprint and Clusters – Flood and Storm



SOP

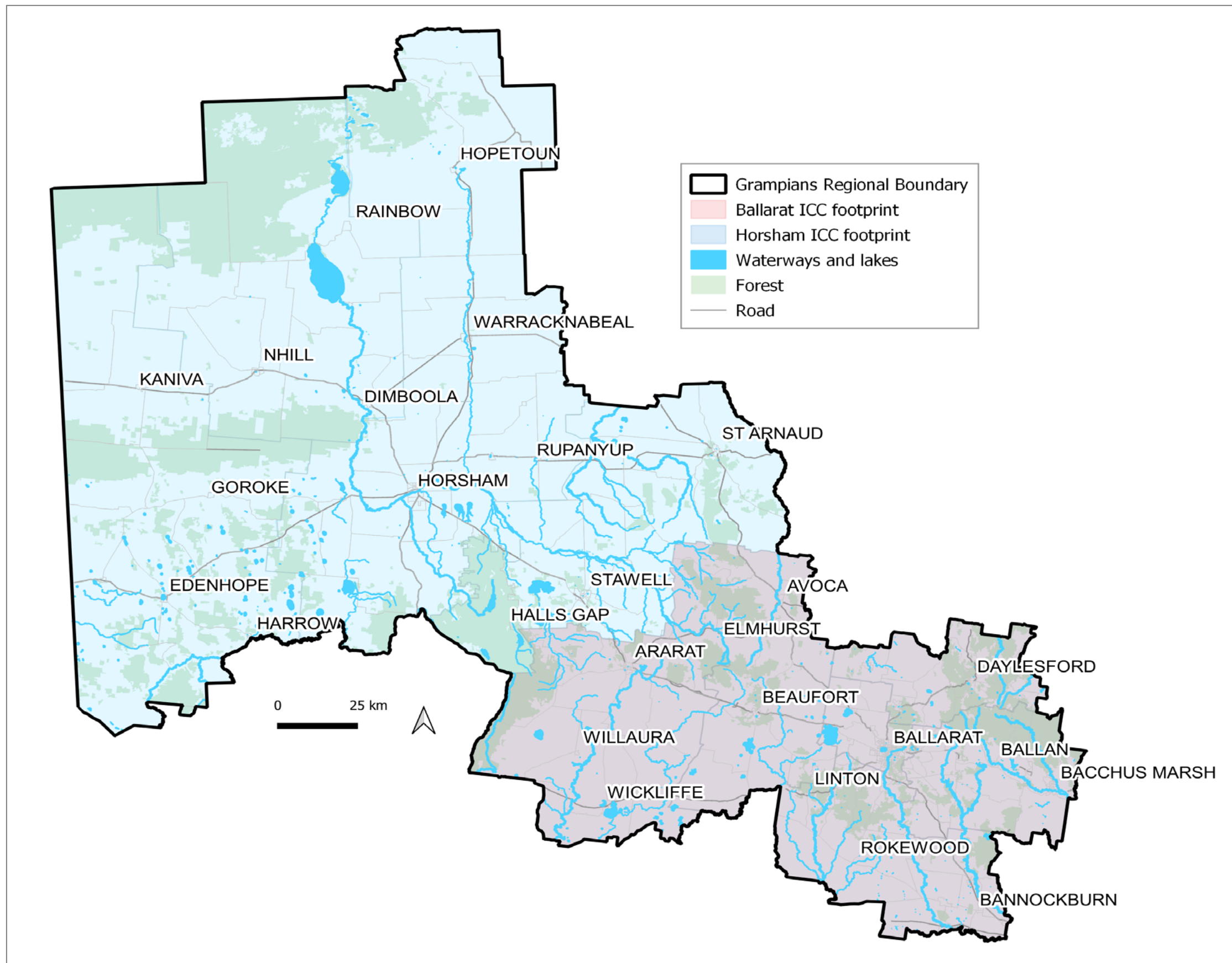
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VICSES Flood Readiness and Activation Trigger Considerations (v3.0 – September 2017)

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 GAI NT 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 footprint, 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 SAC and SDO (monitor)	SCC Level White SAC and SDO (monitor)	SCC Level White/Blue SAC and SDO (actively monitoring)	SCC Level BLUE or When ICC activated SDO and SAC In Place	SCC Level ORANGE Multiple ICCs activated or multi region SDO and SAC In Place Consider Day/Night	SCC Level RED Multiple ICCs activated or multi region SDO and SAC In Place Day and Night
Readiness & Activation (Regional)	RDO (monitor) RAC (aware)	RAC (monitor) RAC (aware)	Regional Command IN PLACE RAC/RDO attends Regional Office	RURAL: Regional Cmd In Place, RC notified METRO - RCC OPEN: with BASE RCT in place Rural - RAC & RDO In Place at Regional Office Metro - RC, RAC, RDO at RCC	RCC OPEN: RCT in place, some agencies available on immediate recall RC, RAC and RDO In Place at RCC	RCC OPEN: Full RCT/most REMT In Place 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 cut 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 alternative 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 everts 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 loss 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.

Attachment 6 – Regional Control Centre Footprint Map



Attachment 7 – Division Command Location Map

