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| June 2021 Extreme Weather Event  Community Report |

# Message from the Emergency Management Commissioner

The June 2021 extreme weather event had a significant impact on communities across many areas of Victoria. The impacts ranged from property damage, flooding, fallen trees, downed powerlines, road closures, prolonged power outages, telecommunication outages and damage to critical infrastructure. The affected communities suffered considerable economic impact, social upheaval and emergency fatigue due to several emergencies occurring at the same time.

Labelled as one of the largest operational events in Victoria State Emergency Service’s history the June 2021 extreme weather event was also, at the time, the largest recorded power outage event that had ever occurred in Victoria. The enormity and extensive impact of this event saw the need to identify key lessons identified from the extreme weather event that are relevant to the community, including what went well and areas for improvement, as well as enable emergency management agencies to inform ongoing continuous improvement, organisational planning and operational processes.

By capturing community sentiment and feedback around the extreme weather event through community conversations and surveying, this Community Report reflects a number of residents’ experiences before, during and after the extreme weather event and describes the context that surrounded these. Through this approach, we have identified a number of key themes, including:

* Weather intelligence and predictive services
* Community engagement and risk awareness
* Public information
* Relief operations
* Transition to recovery

I invite you and your community to read through the case studies and lessons identified within this report and learn of the significant work that has since been undertaken to address the outcomes of this event. Utilising the opportunities that come from internal and external reviews supports the emergency management sector to further strengthen a culture of learning and ongoing improvement of emergency management before, during and after emergencies. This comprehensive Community Report reflects a coordinated approach to continuous improvement by openly and transparently sharing lessons based on evidence in the form of experiences, expert knowledge and community sentiment.

Andrew Crisp APM

Emergency Management Commissioner

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# What is the purpose of this report?

The extreme weather event in June 2021 had a significant impact on communities across several Local Government Areas, including:

* Baw Baw, Latrobe, Wellington, South Gippsland and Bass Coast (Gippsland Emergency Management Region)
* Murrindindi and Mitchell (Hume Emergency Management Region)
* Maroondah, Knox, Yarra Ranges (Eastern Metropolitan Emergency Management Region)
* Cardinia (Southern Metropolitan Emergency Management Region)
* Hepburn and Moorabool (Grampians Emergency Management Region)
* Macedon Ranges (Loddon Mallee Emergency Management Region).

The severe weather had major impacts on critical infrastructure and resulted in damage to properties and the isolation of multiple communities across Victoria. The affected communities suffered considerable economic and social upheaval and emergency fatigue due to several emergencies occurring at the same time.

Community expectations of emergencies such as the extreme weather event in June 2021 vastly differ depending on community member experience, location and situation, and expectations of what the Victorian Government will do before, during and after an emergency are generally increasing over time.

The purpose of this report is to outline key lessons identified from the extreme weather event that are relevant to the community, including what went well and areas for improvement.

The report will be provided to the communities impacted by the extreme weather event with the intention of:

* Providing a feedback loop regarding information collected as part of the Community Sentiment Capture research, community conversation sessions and debriefing processes.
* Sharing the experiences of the community with other Victorian communities to prompt discussion about what actions could improve community resilience and learn from this event to better prepare for future emergencies.

The report is also intended to be used by emergency management agencies to inform ongoing continuous improvement, organisational planning and operational processes.

Since the extreme weather event, many communities, agencies and councils may have undertaken significant work to address the outcomes of this event and the community feedback, including areas to sustain and improve. This report provides a summary of the event and case studies outlining work that has been undertaken since the extreme weather event but may not capture all issues and changes that have occurred.

# How does the sector learn from emergencies?

## Learning lessons

Centred on the lesson’s management approach as defined in the EM-LEARN Framework (2015) and Australian Institute for Disaster Resilience: Lessons Management Handbook (2nd Ed, 2019), and consistent with the national observation, insight, lesson methodology, this report is the product of extensive collaboration between agencies, departments, local governments and members of the community to capture and share the learnings from the June 2021 extreme weather event.

This report is being published with the intent of providing the Victorian emergency management sector with information to support ongoing continuous improvement and learning from the lessons identified throughout this event. This Community Report is designed to support community level learning as well as provide a feedback loop regarding information collected, analysed and the next steps. This report will ensure that lessons of significance to both agencies and communities are considered, implemented and shared across the emergency management sector and with impacted communities.

## Learning from this event

For the extreme weather event, 2,030 observations and 369 insights were captured in a coordinated approach, with data collated through several methods, including:

* Interviews with more than 802 members of affected communities as part of the Community Sentiment Capture through telephone surveys and interviews.
* Community debriefing and feedback collected during community meetings organised by Bushfire Recovery Victoria and councils.
* Interviews with emergency management personnel.
* Outcomes from internal agency/team debriefs and reviews.
* Files and observations submitted into Emergency Management Victoria’s lessons management IT system.

These components collectively contributed to a robust evaluation of the event and were phased to match the community need, emergency management phases and any further operational activity in relevant geographic areas.

To support this report, the lessons management analysis process of *observation*, *insights* and *lessons* was utilised to analyse the data collected. See Figure 1 Lessons Management Analysis Example for an illustrative example.

### The process utilised

* **Data triangulation** which involves the grouping of similar observations from multiple sources such as interviews, behaviours observed and documents.
* **Data coding** which involves the labelling or ‘coding’ of the observation groups into common themes.
* **Data pattern recognition or trend analysis** which involves exploring the observations coded to a theme and identifying the patterns or trends (e.g. similarities and differences across multiple sites, incidents or reports).
* **Data interpretation** which involves interpreting the pattern or trend to determine the insight that summarises that content and/or root cause.

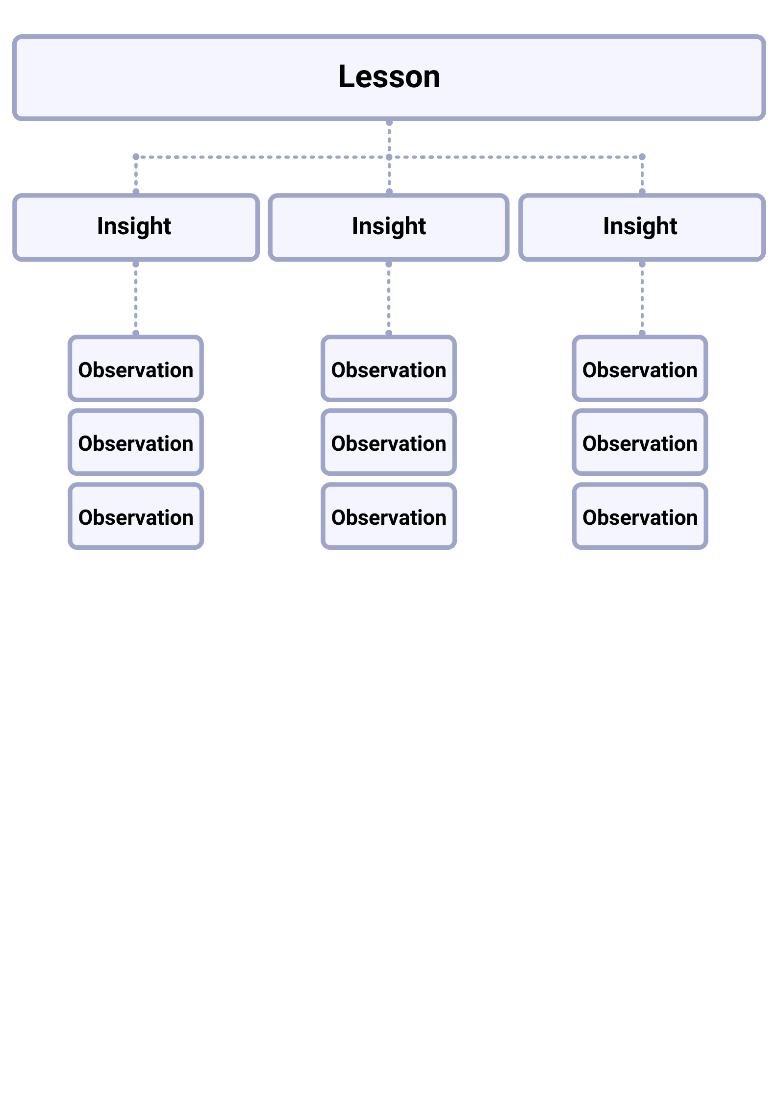


Figure 1: Lessons Management Analysis Example

Observations are a record of a noteworthy fact or occurrence that someone has heard, seen, noticed or experienced as an opportunity for improvement or an example of good practice.

Insights occur when there are multiple observations and pieces of evidence, which have a similar root cause. Typically, a minimum of three observations or pieces of evidence (across multiple sources) were utilised for each insight made, but often this is significantly higher.

Lessons are identified when there are multiple insights and pieces of evidence highlighting a trend across the data. A lesson identified is a viable course of action based on the analysis of one or more insights that can either sustain a positive action or address an area for improvement.

Three insights or pieces of evidence (across multiple sources) were utilised for each lesson identified unless an individual insight was of potentially high risk or the number of observations that support an insight was significant.

Generally, this process is effective in identifying lessons as it allows transparency in how lessons are identified, an extensive evidence base to support lessons and allows all contributions to be included and considered.

## Learning from previous events

An important part of learning from emergencies is reviewing previous events and determining whether lessons have persisted, changed or have led to sustainable change. To assist with the review of the June 2021 extreme weather event, comparisons were drawn from the Review of the 2010‑11 Flood Warnings and Response – Victorian Floods Review. From September 2010 through to February 2011, Victoria experienced some of the worst floods in its history. The impact was far reaching with about one-third of Victoria (including 70 Local Government Areas) experiencing some form of flooding or storm damage, resulting in significant cost, and disruption to regional, urban, and rural communities.

Significant improvement since the 2010‑11 floods yielded community benefits in this event. The need for further ongoing improvement was also identified with the June 2021 extreme weather event, including weather predictions, command and control arrangements, clean‑up, relief and recovery processes, and financial support.

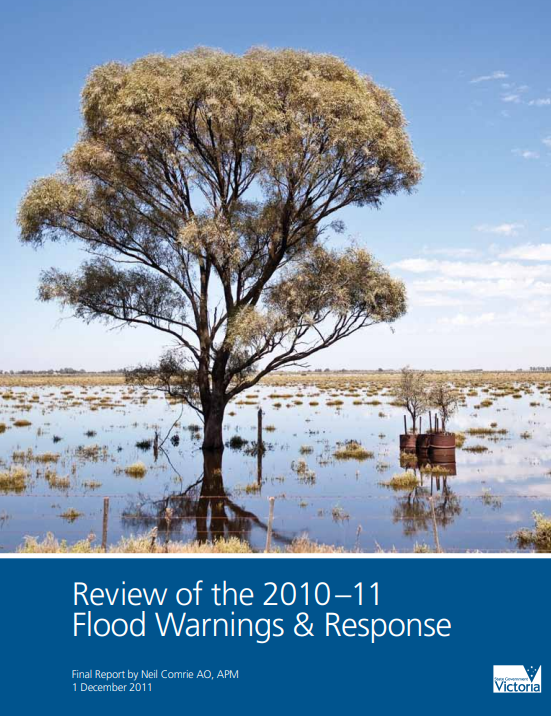


Figure 2: Review of the 2010-11 Flood Warnings and Response

## Weather intelligence and predictive services

Weather predictions, including intelligence and information sharing, the timeliness and effectiveness of flood and storm warnings and public information were areas of concern in both events. Specifically, the community raised concerns with the accuracy and timeliness of flood and storm predictions, warnings or lack of warning. Although there was an appreciation that predicting the extreme weather event in June 2021 was complex and difficult, the adequacy of flood predictions and modelling were still improved due to the learnings from the review into the 2010‑11 floods. This included the introduction of the Victorian Floodplain Management Strategy, the finalisation of the National Arrangements for Flood Forecasting and Warning, and the Service Level Specification for Flood Forecasting and Warning in Victoria[[1]](#footnote-1).

In particular, new gauges were installed on existing flood warning system networks and manually read gauges were upgraded to include telemetry as part of the implementation of the Review of the 2010‑11 Flood Warnings and Response Recommendation 8. These gauge upgrades positively improved the Bureau of Meteorology’s flood prediction models, including information on water height and flow[[2]](#footnote-2).

## Community and control arrangements

Significant development has occurred in refining and enhancing emergency management command and control arrangements due to the review into the 2010-11 floods. This included the development of a flood awareness course for incident control members and personnel who are likely to be involved on the ground during an incident - including sector and divisional commanders (Recommendation 16), as well as clarifying command and control arrangements in all emergencies through reform of Victoria’s emergency management arrangements, including the development of common doctrine, operating procedures and joint training programs (Recommendation 66).

The considerable work undertaken to enhance understanding of flood and clarify command and control arrangements assisted with the management of the extreme weather event. However, issues with interoperability and communications between personnel and agencies were experienced. In particular, there were challenges identified with the multi-agency management of systems, including incident management systems and records management processes, as well as limitations on understanding and applying information such as flood studies, gauging and telemetry and mapping (intelligence) about the likely impacts to communities.

### Relief and Recovery

Relief and recovery arrangements, including financial assistance and clean-up responsibilities, were prominent areas of discussion following both the 2010-11 floods and the June 2021 extreme weather event.

The adequacy of clean‑up and recovery arrangements was examined through the review into the 2010‑11 floods, with a focus on clarifying agency responsibilities (Recommendation 73) and ensuring understanding of the transition to recovery arrangements. This included processes for approving and funding essential works (Recommendation 81) and the development of Register.Find.Reunite, a computer based filing and retrieval system to register, find and reunite family, friends and loved ones impacted by an emergency (Recommendation 78).

The outcomes from the review into the 2010‑11 floods assisted the relief and recovery efforts for the June 2021 extreme weather event. Since then, further learnings have been identified for impact assessments, transition to recovery and the provision of financial assistance and grant and support information during the relief and recovery phases of the event.

## What happened during the extreme weather event?

A low-pressure system moved across south-eastern Australia during the week beginning 7 June 2021. The severe weather impacts associated with this system were focused on Victoria, although South Australia, south-eastern New South Wales and Tasmania were also affected.

In Victoria, damaging to destructive winds and heavy rainfall affected central and eastern parts of the state overnight on Wednesday 9 June 2021, gradually easing on Thursday 10 June 2021. The prolonged damaging to destructive winds and rain caused significant impact and damage, including riverine flooding, unstable and fallen trees, damaged power infrastructure, telecommunication outages and major damage to road networks. Victoria State Emergency Service received close to 10,300 Requests for Assistance relating to the flood and storm event during the period 8 June to 8 July 2021; 9,300 of these within the first week. This is one of the single largest operational events in Victoria State Emergency Service’s history. The majority of those Requests for Assistance were related to trees, building damage, assist fire service and assist police. Emergency Services Telecommunications Authority Triple Zero (000) call volumes exceeded normal activity by up to 5000% for Victoria State Emergency Service at the peak of the storm with long call-waiting times[[3]](#footnote-3).

Widespread 24-hour rainfall totals of 50-150mm were observed through West Gippsland, with several stations recording totals above 200mm. Between 10am Wednesday 9 June to 10am Thursday 10 June 2021, Victoria recorded more than 280mm of rain at Mt Baw Baw, 250mm at Thompson Catchment and 270mm at Mount Tassie. Strong winds were observed, with wind gusts of 119km/h recorded at Puckapunyal and 115km/h at Wilsons Promontory.

The rainfall resulted in moderate to major flooding in several catchments in Eastern Victoria, with parts of Traralgon evacuated. Several rivers in eastern Tasmania also reached minor to moderate flood levels, widespread snowfall was observed through the New South Wales alps all the way to the Queensland border, and hazardous surf conditions affected the Gippsland coast.

The Gippsland town of Traralgon was particularly impacted by flooding. Following a series of earlier warnings, at 10am on Thursday 10 June 2021, an ‘Evacuate Now’ warning was issued for the vicinity of Traralgon and subsequently Traralgon Creek, which continued until Friday 11 June 2021. The peak flood height at the Traralgon Gauge, 5.7 metres, was the highest observed since June 1978. Some residents close to Traralgon Creek were rescued from flood waters by swift water crews. An Emergency Warning for major flooding was also issued for the Yarra River between Coldstream and Warrandyte. The peak flood height at the Yarra Glen Gauge, 4.6 metres, was the highest observed since February 2011.

## Major impacts across Victoria

The weather caused major impacts to critical infrastructure, damage to properties and isolation of multiple communities across Victoria. The scale of storm impacts was significant, with 3.3 million hectares across the state impacted, which included approximately 1.97 million hectares of public land. In some cases, the storm impacts required extensive works to rebuild critical infrastructure. The most storm affected areas in Victoria were the following Local Government Areas:

* Baw Baw, Latrobe[[4]](#footnote-4), Wellington, South Gippsland and Bass Coast (Gippsland Emergency Management Region)
* Murrindindi and Mitchell (Hume Emergency Management Region)
* Maroondah, Knox, Yarra Ranges (Eastern Metropolitan Emergency Management Region)
* Cardinia (Southern Metropolitan Emergency Management Region)
* Hepburn and Moorabool (Grampians Emergency Management Region)
* Macedon Ranges (Loddon Mallee Emergency Management Region).

There were two confirmed fatalities relating to the storm event (one in Gippsland floodwaters in Woodside; the other in floodwaters off Maddens Bridge Road in Glenfyne, 45km east of Warrnambool). It is currently a matter for the Coroner to determine the actual cause of death.

### Extensive power and telecommunication outages

At the time, the June 2021 extreme weather event was the largest power outage event that had ever occurred in Victoria. The outages were significant in both the number of customers who lost power, and also the duration of the power outages. More than 330,000 customers experienced power outages as a result of the storms, and at peak, more than 297,000 were without power, including 4,000 power dependent customers, with 68,000 customers remaining off-supply 72 hours after the event.

Due to the significant damage to electricity critical infrastructure, many customers were off supply for an extended period of time, as extensive works were required to rebuild impacted infrastructure. The Victorian Government worked closely with electricity distribution businesses to prioritise restoration sites, with power restored to 50 percent of customers within 3 days. Power outage restoration work took longer than usual due to extensive damage to the electricity distribution network and accessibility issues for AusNet Services crews. Electricity distribution businesses reported more than 1,200 wires down as a result of the storm. The power outages affected telecommunications, water treatment facilities, health services, supermarkets and food and grocery distribution centres.

On 10 June 2021, 383 mobile towers were without power, and National Broadband Network services were unavailable for 69,390 customers. Ten communities were identified as isolated with no communications on 11 June 2021. The loss of telecommunications impacted the ability of the community to contact emergency services for assistance as well as access warnings and public information.

Several communities experienced power outages for many days and weeks. On Thursday 17 June 2021, AusNet Services stated at least 3,000 of the households in the Dandenong Ranges could be without power for the next 3 weeks or until 10 July 2021. The main suburbs without power included Ferny Creek, Kalorama, Mount Dandenong, Olinda, Sassafras, Sherbrooke, The Basin, Tremont, and Upwey.

### Transport, access and infrastructure impacts

There was significant damage to major road networks, as well as transport routes and other infrastructure. During the event:

* Six water treatment plants lost mains power and were required to operate on generators.
* 17 health services experienced disruptions to power supplies and were required to operate back-up generators.
* Eight schools in the Dandenong Ranges were closed because of the weather impacts.
* Many national parks, state forests and other public lands were shut after being deemed inaccessible or dangerous.
* Over 2,100km of state managed roads were impacted from Grampians through to Gippsland due to fallen trees, landslips and flooding.
* Multiple metropolitan and regional rail corridors and coach routes experienced disruptions due to flooding, fallen trees and communication outages.

Several communities were isolated from any telecommunication access, including landline, mobile phone, internet, and Triple Zero (000) access. Most of the loss of telecommunications was due to power outages.

The storm and associated flooding impacted the Yallourn mine in the Latrobe Valley, which supplies more than a fifth of Victoria's electricity needs. Cracks were identified along the Morwell River Diversion embankment, which had the potential to cause a collapse of the mine wall. The significant consequences had to be carefully managed, including the implications for the supply of coal to the Yallourn power station. On Thursday 17 June 2021, a State of Emergency was declared for energy. The declaration allowed Energy Australia to undertake emergency works and divert river water away from the mine.

The storm event also impacted the COVID-19 response through the closure of some testing sites and vaccination centres in the impact areas for a short period of time, although this did not affect capacity or testing times.

As of 27 June 2021, a total of 2,395 initial impact assessments had been undertaken across the state, with considerable agricultural damage (pasture and stock loss) reported, along with 135 properties classified as damaged but habitable and 129 properties damaged and uninhabitable.

## Relief and recovery

On 9 and 10 June 2021, response, relief and early recovery activities were initiated quickly by the community and supported by emergency management agencies and took place under State Emergency Management Arrangements. In the days following the storm, significant work was undertaken across the state to provide relief, commence clean‑up and support early recovery. A wide range of agencies and organisations provided relief to impacted community members, including food, accommodation, telecommunications access, alternative power sources and welfare support. Specialist resources were engaged to clear trees, stabilise roads, repair bridges and undertake other critical work. Power crews cleared multiple areas where trees had taken down powerlines, making repairs, restringing the lines, and testing them for safety.

In response to the large-scale and prolonged power outages, the Victorian Government stood up a new Small Generator Loan Program, which distributed 186 on-loan generators to residents experiencing prolonged power outages. The on-loan generators gave people who wanted to stay at home enough electricity supply to power the basics like some lights, a microwave, and a small heater. Volunteers from Victoria State Emergency Service and Country Fire Authority along with Australian Defence Force personnel, delivered the generators and accessories and installed them, whilst Energy Safe Victoria provided safety information regarding generator operation, set up, refuelling and maintenance.

On 17 June 2021, Bushfire Recovery Victoria was requested to coordinate state and regional recovery and clean-up from the event. From 18 to 21 June 2021, Bushfire Recovery Victoria established a regional presence in the most storm affected areas. On 25 June 2021, the transition from response to recovery coordination formally commenced with the State Emergency Management Committee approving recovery governance.

To provide further assistance and support to impacted Victorian communities, requests for Commonwealth assistance were made via Emergency Management Australia. On 16 June 2021, the Emergency Management Commissioner made an initial request for Australian Defence Force personnel to assist with logistics and planning. On 18 June 2021, the Emergency Management Commissioner made a further request for 120 Australian Defence Force personnel to provide support to Victorian communities impacted by the storms. On 7 July 2021, all Australian Defence Force resources for this event were demobilised.

## Funding Support

On 11 June 2021, Victoria activated jointly funded Commonwealth-State Disaster Recovery Funding Arrangements with the Commonwealth Government. Payments activated under these arrangements for the event included:

* Emergency relief assistance delivered by the Department of Families, Fairness and Housing through the Personal Hardship Assistance Program provided payments of up to $560 per adult and $280 per child (up to a maximum of $1960 per eligible family) to help meet immediate needs for those whose properties were directly impacted by the storms. As of 3 August 2021, 651 payments had been made of over $700,000.
* Emergency re-establishment assistance delivered by the Department of Families, Fairness and Housing through the Personal Hardship Assistance Program provided payments to households of up to $42,250. Emergency re-establishment assistance is provided to help eligible people whose principal place of residence is damaged due to the storms to re-establish their homes when their resources are inadequate, and their re-establishment needs are not met by other forms of assistance. As of 3 August 2021, 40 payments had been made of over $150,000.

Primary Producer $25,000 recovery grants to assist with the cost of clean-up and reinstatement. As of 2 March 2022, 34 applications have been approved in full or in part payment amounting to $693,843.

In response to the large-scale and prolonged power outages, the Victorian Government established a new financial assistance scheme for people without power for an extended period. The Prolonged Power Outage Payment scheme allowed payments of $1,680 per week for up to three weeks and was jointly funded by the Commonwealth and Victorian Governments. As of 20 October 2021, a total of $11.9 million in Prolonged Power Outage Payments have been administered by AusNet Services to residents and businesses.

Councils have estimated the costs incurred or to be incurred in providing emergency assistance to individuals (under the Disaster Recovery Funding Arrangements) or in the repair and reinstatement of the damaged essential public assets (under the Disaster Recovery Funding Arrangements) will be $76 million for the event. This estimate is subject to revisions by councils as impacts are assessed. As of 2 March 2022, $16.4 million in claims have been lodged for assessment by the councils impacted by the event. Funding advances on claims have been provided to the severely impacted councils amounting to $21.78 million.

The Insurance Council of Australia declared the Victorian flood and storm emergency of 9 June 2021 a catastrophe, which triggered Insurance Council of Australia resources in coordinating insurers to work as a priority with people affected by the flood and storm who had lodged insurance claims. As of 14 June 2021, more than 6,500 claims had been made that are relevant to the impact of the extreme weather event.

On 1 July 2021, the Australian Government activated the Australian Government Disaster Recovery Payment and the Disaster Recovery Allowance to support those most impacted by the storms and flooding in Victoria. Where eligible, people in the nominated municipalities directly impacted by the event were able to apply for one-off payments and income support.

In addition to relief supports previously announced, additional support payments announced in July 2021 included the Council support fund (funded by Victoria for $8.2 million), Clean‑up (jointly funded, initially $55.5 million plus a further $49.5 million) and Social recovery supports including recovery case support (jointly funded for $13.8 million).

In November 2021, the Victorian Government announced an additional $73 million to help with ongoing emergency stabilisation and immediate emergency recovery works. This funding supports the Department of Environment, Land, Water and Planning, Parks Victoria and water authorities to continue the significant program of works already underway.

It includes funding for:

* Repairs to roads and access tracks needed for public land firefighting.
* Works on hazardous and fallen tree removal on public land.
* Safety works to ensure parks and forests are safe to visit.
* Stabilisation of Gippsland waterways and stream banks, restoration works on Melbourne Water's water infrastructure, and repair to Cowwarr Weir and water monitoring gauges.
* Works to assess and protect threatened species.
* Weed control on public land.

Recovery activities will continue for some time, with agencies working closely together to support the recovery needs of communities.

# How were communities engaged through the extreme weather event?

Communities bear the consequences of emergencies and have often developed coping mechanisms and strategies to reduce the impact and manage the unfolding consequences of these emergencies.

Even though significant power and telecommunications outages impacted traditional methods of communication and community engagement, they did not hinder the engagement within communities.

Where possible, the community came together and, with support from operational personnel and councils, utilised a range of communication methods. This included community meetings in central locations, community notice boards and door knocking to convey regular advice to people in impacted areas. Key public information included messages about emergency risk, potential health impacts, mental health support, power outage information and availability of relief and recovery supports. This included the Do Not Drink advisory notice warning people not to drink tap water in several locations, including Trentham, Kallista, Sherbrooke and the Patch.

Relief centres, including community hubs, were quickly established by community with the support and initiative of emergency management agencies and councils. These sites played a vital role in providing safe and centralised locations for local community members and businesses to obtain information updates, access essential necessities as well as provide an opportunity for involvement in the recovery process.

Additionally, a number of community meetings were hosted by councils, emergency services and Victorian Government agencies, with representatives from councils, Bushfire Recovery Victoria, Victoria Police, Victoria State Emergency Service, the Department of Families, Fairness and Housing, Australian Red Cross, AusNet Services and Regional Roads Victoria as part of Department of Transport. These meetings provided updates on storm recovery, information about where to access assistance and gave community members an opportunity to access emergency relief assistance and ask questions.

For residents identified with a prolonged power outage, a door knock/outreach program was established, led by relevant councils and supported by the Australian Red Cross, the Australian Defence Force and Victorian Council of Churches - Emergencies Ministry. Information was also provided to connect people with assistance including referral through to generator support if needed.

# How was the community feedback about the extreme weather event captured?

To effectively capture community sentiment and community feedback around the extreme weather event, Quantum Market Research undertook a two-part (quantitative and qualitative) program of research between September‑October 2021. This involved 802 telephone and video interviews of residents in affected geographical areas (see Case Study: Community Sentiment Capture).

Whilst the quantitative phase of research was designed to gain a robust and measurable understanding of residents’ experiences before, during and after the extreme weather event (and uncovered some clear findings and commonalities amongst residents), the supporting qualitative phase offered greater depth and context based on specific, individual experiences.

The data obtained through this research not only provided observations for inclusion in the data analysis for lessons, but also identified two key consistent trends; the need for greater clarity and specificity in warnings and alerts to encourage greater preparation, and the need for education to fill knowledge gaps.

In addition to this research, a number of mostly online community conversations were hosted by councils and Bushfire Recovery Victoria to allow local communities and businesses to share their experiences, ask questions and make suggestions. Community conversations were held in:

* Belgrave
* Blackwood
* Clonbinane
* Healesville
* Heathcote Junction and Wandong
* Hepburn
* Kalorama
* Korweinguboora, Barkstead and surrounds
* Latrobe City Council, including Traralgon and Morwell
* Lilydale
* Macedon, Mt Macedon and surrounds
* Monbulk
* Mount Evelyn
* Olinda
* Upwey
* Walhalla
* Woodend, Ashbourne and surrounds
* Yarra Junction.

Furthermore, in some instances, councils submitted reports in addition to these processes, such as survey data, further complementing the components and foundational evidence for analysis.

# Key learnings from the event

## Weather intelligence and predictive services

The June 2021 extreme weather event was a widespread, cascading and compounding emergency. A range of meteorological hazards, heavy rainfall, damaging/destructive winds, and flooding impacted a large geographical area. These hazards caused both direct and indirect impacts and consequences to communities. This in turn presented a complex operating environment for all agencies. Further, infrastructure disruption, particularly power and telecommunications, affected public messaging channels.

Intense and dynamic low-pressure systems, such as this extreme weather event, are complex and often difficult to forecast. Over the week leading up to the event, models[[5]](#footnote-5) showed a range of scenarios, with the majority initially favouring low-pressure system development, suggesting rain, flooding and damaging winds were possible across the Gippsland area, with heavy falls most likely in the far east.

As the week progressed, the guidance increasingly suggested that the ‘low’ would develop over West Gippsland, with the most significant rain and flood impact eventually felt through West Gippsland and Central Victoria. This was a very significant flood event for West Gippsland and was equivalent to a roughly one in 10-to-50-year event. For example, Traralgon recorded the largest flow generated in the catchment since 1978.

In the days closer to the extreme weather event, changes in the modelled strength, structure and location of the low-pressure system led to greater confidence in a very significant wind impact further to the west over central Victoria. Severe Weather Warnings for wind gusts of 110km/h were issued the day prior. What eventuated was destructive wind gusts of 125km/h (if not higher), with blizzard conditions and heavy rain leading to flash and riverine flooding. The ability to accurately warn for high-end, localised, damaging to destructive winds is limited by the complexities involved in predicting the structure and evolution of these systems. Additional factors that were unique to this extreme weather event and contributed to the magnitude and severity of damage include the wind direction, longevity and antecedent conditions (see Case Study: Antecedent Conditions).

Additionally, the winds came from the southeast (instead of a typical northwest wind direction), exposing large, normally sheltered trees to unusually strong winds. The event was also unusually long-lived, with severe winds and heavy rain across southern Victoria lasting for up to 12 hours in some areas. Moreover, many downed trees had a very large canopy, with minimal leaf drop owing to a relatively cool second half of summer and a generally wet and warm season. This combined with very wet conditions in the lead up to and during the event saturated soil, leading to deep water‑logging resulting in trees being uprooted more easily.

Due to forecast uncertainty, it is necessary to be more general rather than specific when talking about timing, severity and location of impactful weather at longer lead times. Doing otherwise would result in rapid and dramatic changes in messaging and a high false alarm rate. In the week leading up to the extreme weather event, the risk of heavy falls, flooding, and strong winds over southern and eastern Victoria was communicated via briefings, radio, television and social media. As the days unfolded, confidence in the details of the system increased, enabling a more detailed and focused forecast.

Additionally, the winds came from the southeast (instead of a typical northwest wind direction), exposing large, normally sheltered trees to unusually strong winds. The event was also unusually long-lived, with severe winds and heavy rain across southern Victoria lasting for up to 12 hours in some areas. Moreover, many downed trees had a very large canopy, with minimal leaf drop owing to a relatively cool second half of summer and a generally wet and warm season. This combined with very wet conditions in the lead up to and during the event saturated soil, leading to deep waterlogging resulting in trees being uprooted more easily.

Due to forecast uncertainty, it is necessary to be more general rather than specific when talking about timing, severity and location of impactful weather at longer lead times. Doing otherwise would result in rapid and dramatic changes in messaging and a high false alarm rate. In the week leading up to the extreme weather event, the risk of heavy falls, flooding, and strong winds over southern and eastern Victoria was communicated via briefings, radio, television and social media. As the days unfolded, confidence in the details of the system increased, enabling a more detailed and focused forecast.

## We heard…

### Challenges understanding weather warnings and impacted weather intelligence

Prior to the event, both the community along with the emergency management sector was expecting and preparing for a major flood event, with the strength and directions of winds associated with the event being difficult to predict and measure to then inform warnings and information to the community. It was noted by both emergency management personnel and the community, that warnings and information were felt to be delayed, particularly in the early stages of the event. This was potentially due to a lack of understanding by some emergency management personnel regarding how to effectively utilise Bureau of Meteorology products and information to communicate the confidence levels and potential size and severity of the event. This was coupled with insufficient knowledge of the dangers posed by antecedent conditions to inform messaging. Furthermore, intelligence gaps were identified in both community and emergency management personnel regarding knowledge of wind, particularly predictions and measuring strength and direction, and understanding of some terminology.

## What’s happened since…

Victoria State Emergency Service and Bureau of Meteorology are continuously working and learning together to improve the communication and use of weather forecasting and possible impacts estimation. In particular, there is research currently being undertaken to consider additional thresholds for issuing severe weather warnings for winds. The thresholds under consideration include wind direction, wind duration and preceding rainfall patterns.

In January 2021, Emergency Management Victoria entered a strategic partnership with the Victorian Centre for Data Insights to improve its data and analytics capability and generate insights at the speed and scale required. The primary objective of this partnership has been to enhance the emergency management sector’s data and analytics capability before, during and after emergencies. The emergency management sector will continue to require access to data to make decisions and inform planning before, during and after emergencies and this partnership works to enable this.

### Case Study: Antecedent Conditions

**What are antecedent conditions?**

Antecedent conditions represent a temporary state within natural or artificial systems that precede and influence the onset and magnitude of a hazard and its consequences. Preconditions are generally static or slow changing and influence the inherent (as opposed to temporary) susceptibility of an area. In natural systems, common preconditions include the topographic geometry, soil structure and rock type of a given location, whereas soil moisture content, groundwater level, and vegetation cover are considered dynamic factors which represent antecedent conditions for certain types of hazards[[6]](#footnote-6). Examples of antecedent conditions for specific hazards include tidal phase (tsunami and storm surge), vegetation moisture levels (forest fire), humidity (heat waves), groundwater level (flooding) and wind direction and strength (volcanic eruption).

**June 2021 weather conditions**

In the case of the extreme weather event, the potential impacts of the complex dynamic low-pressure system were difficult to forecast and were further complicated by a number of unique factors that contributed to the magnitude and severity of the event. Rainfall in June 2021 was above average for much of Victoria, with measurements indicating that on average across the state, rainfall was 45% above the long-term June medium of 58mm, making it Victoria’s wettest June since 2014.

In the three days beginning 9 June 2021, rainfall totals in South and West Gippsland reached up to 300mm, with many locations recording their highest June daily rainfall since measurements began more than 100 years ago[[7]](#footnote-7). Whilst modelling produced by the Bureau of Meteorology preceding the event did suggest rain, flooding and damaging winds across the Gippsland area, it was only in the days prior to the event occurring that the strength, structure and location of the low-pressure system could be more accurately predicted, indicating a very significant wind impact over central Victoria.

**Outcome**

The substantial volume of rain that had fallen over Gippsland and central Victoria in the lead up to, and during, the event signified dynamic antecedent conditions including significant drenching of the soil, resulting in saturated soil and deep-water logging of trees. However, in contrast to the relatively frequent 100km/h wind gusts from the northwest often experienced in central Victoria, the damaging and destructive winds associated with the extreme weather event originated from the southeast, exposing large and typically sheltered trees to unusually strong winds. Due to the combination of wind direction, the longevity of the event and antecedent conditions, it was challenging for meteorologists to forecast and warnings to be effectively translated into potential impacts for communities and the sector, resulting in major impacts, including a large number of fallen trees across impacted areas[[8]](#footnote-8).

# Community engagement and risk awareness

Closely tied to the broader theme of public information, community engagement and risk awareness is important for community and emergency management decision making before, during and after major emergencies. Communities felt inadequately prepared for the severity of this extreme weather event, as well as storms and flooding emergencies in general.

Widespread knowledge gaps within communities in relation to storm preparation, planning and where to seek relevant information became apparent during this extreme weather event, with local community members seeking further understanding of the risk to their property in addition to practical steps that could be undertaken to lessen potential impacts. Although information and warnings before the event were issued, there was a perceived lack of local detail and recommended actions associated with the messaging, further adding to the knowledge shortcomings.

Furthermore, power and telecommunications outages, access issues and physical hazards, such as fallen trees and damaged roads, as well as COVID-19 safety considerations, impeded emergency management agencies and councils’ efforts and, in some cases, presence at relief centres and community hubs.

Although emergency management agencies, particularly councils, identified opportunities to engage with local communities and provide additional resources and requested information where possible, the complexities and severity of this particular extreme weather event and concurrent pandemic further hindered efforts and resulted in additional stress to local communities and businesses already suffering from the impacts of COVID-19.

## We heard…

### Community preparation for an extreme weather event

Prior to this event, many impacted community members from across the state felt they were not adequately prepared for an extreme storm or flood event. Some community members perceived their property to be at low or no risk of damage and many residents in impacted communities were unaware of what the potential risks and impacts to their area would be and had underestimated the severity of the event. As a result, some community members did not implement precautionary or mitigative measures or take preparatory action. Immediately following the event, some residents had undertaken remedial action to improve the resilience of their properties for future storm events, such as tree management, investment in generators or improvement of drainage.

However, a significant proportion of community members have taken limited or no remedial action. Additionally, some communities indicated that their knowledge base and the strong educational focus on fire-related events is not reflected for flood and storm risk, including the perceived minimal availability of storm and flood information, and a lack of familiarisation with such events, including opportunities to participate in exercising and preparatory activities for this emergency type (for example, safe evacuation from high-risk areas). However, established relationships between fire agencies and the community due to experienced fire-related events were beneficial during the multi-agency response and recovery efforts.

### Community participation in recovery services

Prior to the formal transition to recovery, emergency management agencies and councils established a wide variety of services to support impacted communities. This included community hubs, regular community meetings for relief and, after the formal transition to recovery, Community Recovery Committees and associated groups. The value in these initiatives, particularly with local and business representation, was the opportunity for community involvement in the recovery process, though access to such services was varied across different communities. Communities with lower participation rates in the services/initiatives indicated that many residents were unaware of what services were available and at times felt uncomfortable accessing services as they perceived other community members to be in greater need of assistance. Community members expressed that a single, centralised location where residents could have improved access to information was lacking, particularly in the event of power and telecommunications outages. Some members found it challenging to locate information relating to recovery support, services and programs, financial support and contact information for key agencies and organisations.

## What’s happened since…

Reform is currently underway as a result of a number of recommendations from the Royal Commission into National Natural Disaster Arrangements[[9]](#footnote-9), including communication of natural hazard risk information to individuals, the review of the Disaster Recovery Funding Arrangements national consistency, thresholds and activation processes.

Significant work has already been completed in late 2021 with Victoria the first to implement the new Australian Warning System[[10]](#footnote-10) that provides nationally consistent warning levels and warning icons. National implementation will be completed in 2023 providing a consistent framework for warning Australian communities for flood, severe storm, bushfire, cyclone and heat.

In addition, the Inspector-General for Emergency Management conducted a review of 10 years of reform in Victoria's emergency management sector and work is underway to implement the recommendations. This includes building a preparedness strategy that is relevant to all emergencies, aligned with existing community resilience initiatives, includes a clear, consistent and accessible preparedness message, builds on the community preparedness work of the Australian Red Cross and considers leading practice from other jurisdictions.

Furthermore, Department of Environment, Land, Water and Planning have undertaken a significant amount of work to address key outcomes from their Energy After Action Review and Distribution Network Resilience Review (Phase 1). This includes developing guidelines and supporting documentation to ensure relief measures can be implemented quickly for future events, and improve the provision by distribution businesses of timely, relevant and tailored information about power outages, restoration time and restoration activity.

### Case Study: Community Sentiment Capture

**Overview:**

To capture feedback from impacted community members, a ‘Community Sentiment Capture’ program was developed as a key component of the review into the June 2021 extreme weather event. The program’s purpose was to collect individual feedback and perspectives related to the extreme weather event from a range of community members. This feedback will be utilised to improve the level of information and support provided to impacted communities during future events. The Community Sentiment Capture Research was based on interviews conducted between September – October 2021 by Quantum Market Research in partnership with Emergency Management Victoria. The research was a two-part program which involved 802 quantitative and 15 qualitative interviews, with participants sourced from the quantitative interviews after opting in to partake in further research. The interviews were conducted through voluntary telephone questionnaires, capturing the community sentiment of residents in areas affected by the extreme weather event. The questionnaire was structured chronologically (before, during and after the event). A summary of the key findings was divided into two overarching categories:

**Clarity of warnings and information**

Residents indicated they would like relevant authorities to provide greater clarity in terms of alerts, information and support available, including:

* The issuing of accurate, timely and targeted alerts or warnings to residents before and during a weather event that indicates the level of potential severity and impact (if possible).
* Support residents with resources to develop practical and actionable emergency plans (for storms and flooding) and maintain the accuracy of information to give residents confidence in how to prepare for and respond to an extreme weather event.
* Potential to create opportunities for contact with residents during and after an extreme weather event (if safe to do so) to avoid residents feeling abandoned or isolated.

**The identification of knowledge gaps**

There are identified knowledge gaps across communities about storm preparation and planning, and where to seek relevant information and support to assist decision making. These include:

* Understanding their property’s level of potential risk from an extreme weather event (especially storms).
* Practical steps around to how to adequately plan and prepare for a storm.
* Where and how to access up-to-date information in the event of, and following, a storm event (including during outages where phone or internet access is unavailable).
* Where and how to access relevant support services during and after a storm.

**Conclusion**

These findings were utilised in the lessons management approach for this learning review, incorporated as insights, and will ensure that lessons of particular interest to impacted communities are identified, shared and implemented across the emergency management sector and within impacted communities.

# Public information

Communities rely on information and warnings to make vital planning and safety decisions when faced with a major emergency. Victoria’s centralised website for communicating information and warnings is VicEmergency[[11]](#footnote-11). The preparedness, response and recovery information found on VicEmergency is often relayed through multiple agency channels as well as social media, radio, television, VicEmergency Hotline and in some cases, via targeted telephone alerts or the use of the public address system.

The high dependence on power and telecommunications to disperse messages, information and warnings were compromised due to the complex and widespread impacts of the extreme weather event. Community members experienced difficulties and challenges in receiving emergency information via these traditional methods, prompting adaptation and customary approaches to obtaining vital information to inform decision making. This included establishing a centralised hub for community members and emergency management personnel to gather and receive information updates.

In addition to the challenges around the dispersal of information and warnings experienced due to the power and telecommunications outages, communities felt that public information and warnings were not tailored at the local level or specific enough to their situation and were delayed. This added another level of complexity for the community when preparing and responding to the changing conditions. This was attributed to a wide combination of factors, ranging from capacity and experience to issue a high volume of warnings, to familiarity with the local area, to a lack of clear guidance on what to do when such delays are becoming sustained or substantial.

Communicating hazards and/or risks to Victorian communities is imperative before, during and after a major emergency. Even with the scale, complexity and challenges experienced for this extreme weather event, 336 warnings and alerts[[12]](#footnote-12) (excluding the Bureau of Meteorology warnings) were issued in a period spanning four days, with 314 directly related to flooding, and 21 related to storm (with one warning issued for a structure fire).

## We heard…

### Integrate local information into community messaging

Arrangements were in place to issue severe weather warnings at the state level, however this resulted in sustained and substantial delays due to issuing the large number of public information messages and warnings that were required during this event. Challenges included a lack of familiarity with impacted areas, the emergency type and publication challenges. In addition, there was a lack of identified opportunities to better integrate local information into messaging (that included targeted local information about potential risks and impacts) to ensure a more tailored and targeted approach to communications and messaging that is suitable to the audience.

### Alternate channels for when there is no power or telecommunications

### The community’s ability to access emergency information at the time of this event was impacted by the loss of power and telecommunications. High dependence on technology and the internet to disseminate and receive information created challenges during this event and resulted in reports of some community members being unable to access information in the days following. While a range of strategies were used, prioritising and supporting the different communication channels rapidly evolved during the incident. This included examples of some agencies adjusting the distribution of information, including increased use of broadcast media, prioritisation of developing and distributing community newsletters (through on-ground operational resources), and the rapid establishment of community meetings to share information.

### Impacts were not communicated promptly

It was indicated by community members that in locations where meetings were established in the early stages of the event and where emergency management representatives were present, community members felt that messaging was effective and well-received. However, some residents indicated that the messaging around the impacts were not effectively identified or communicated in a timely manner, particularly via media outlets such as the emergency broadcasters, resulting in a lack of understanding regarding the severity and potential impacts of the event. Emergency management personnel agreed that combined press conferences with organisations such as the Bureau of Meteorology, Emergency Management Victoria and Victoria State Emergency Service were effective in delivering media messaging across multiple platforms. However, this event also highlighted issues relating to delays in the communication of destructive wind and major flood warnings via the VicEmergency app. In addition, there is a limited community understanding regarding flood warnings including the need for non-technical language, the differences within and between minor, moderate, and major thresholds as well as the difference between a flood watch and a flood warning.

## What’s happened since…

The extreme weather event was a complex, widespread, cascading and compounding emergency. A range of meteorological hazards, heavy rainfall, damaging/destructive winds and flooding impacted a large geographical area and had both direct and indirect impacts and consequences on local communities.

Streamlining and strengthening of the protocols for issuing severe weather messages using VicEmergency is underway. This work also considers observations from the recent storm events in October 2021, December 2021 and January 2022.

There are significant challenges associated with issuing public information and warnings prior to observing the resulting impacts of the storm and floods. Infrastructure disruption also affected access to public messaging channels, particularly power and telecommunications outages. However, in some instances, this issue was quickly addressed through innovative and resilient community actions and the use of alternative communication channels, presenting opportunities for forward planning and preparedness activities for future events.

The Victorian Government is pursuing a number of avenues to improve the resilience of telecommunications networks during emergencies. These initiatives are working to improve communications network coverage across the state and include:

* Co-investing in and supporting the implementation of the Commonwealth Government’s Strengthening Telecommunications Against Natural Disasters (STAND) package[[13]](#footnote-13).
* Delivering Victorian Government mobile programs and participating in Commonwealth Government Mobile Black Spot Program[[14]](#footnote-14).
* Delivering the $500 million Connecting Victoria program[[15]](#footnote-15).

In response to the extreme bushfire season of 2019-20 which resulted in the loss of life, property and wildlife and environmental destruction, the Royal Commission into National Natural Disaster Arrangements was established on 20 February 2020[[16]](#footnote-16). In addition, Victoria’s Inspector-General for Emergency Management undertook an Inquiry into the 2019–20 Victorian Fire Season. To address recommendations and observations from both reviews, the Victorian and Commonwealth Governments continue to work together and with critical infrastructure industry to strengthen existing resilience arrangements and identify opportunities to minimise service disruption to the community.

# Relief operations

Relief operations occur during an emergency and within the initial period after an emergency, often involving emergency management agencies at the state, regional and local levels to ensure a collaborative and coordinated whole of government approach in the provision of essential needs to individuals, families and communities[[17]](#footnote-17). A number of agencies, government departments, non-governmental organisations (such as Australian Red Cross, Salvation Army and Victorian Council of Churches – Emergencies Ministry) and councils have responsibility for providing or supporting direct assistance to individuals, families, and communities or indirect assistance through the resupply of essential goods or services to communities isolated in an emergency[[18]](#footnote-18). These include the provision of the following services:

* emergency financial assistance
* emergency shelter
* distribution of material aid (non-food items)
* food and water supply
* community relief information
* psychosocial support
* animal welfare
* health and medical assistance
* reconnect family and friends.

During the extreme weather event, the significance of the practical and emotional impacts was felt differently across, and within, different geographical areas. For example, residents in central highlands (Hepburn Shire), Macedon Ranges and Dandenong Ranges reported

experiencing significantly more severe impacts on their properties than in other areas. Nevertheless, there were a number of prominent themes to the experiences reported across the impacted areas within Victoria, particularly in relation to financial assistance, relief centres and community hubs.

Relief centres and community hubs play an important role in the relief phase of an emergency event. Often established in places such as a town hall or community centre, relief centres and community hubs provide immediate and basic services. For the extreme weather event, in particular, washing facilities and laundry services, as well as access to power, were offered to people affected by an emergency[[19]](#footnote-19) along with food, clothing, first aid, personal and financial support, emergency shelter and information.

Support services and financial information was made available to community members impacted by the storms and flood, including information on government financial assistance such as:

* Personal Hardship Assistance Program[[20]](#footnote-20)
  + Emergency Relief Payments.
  + Emergency Re-establishment Assistance Payments.
* Prolonged Power Outage Payment for Households.
* Prolonged Power Outage Payment for Businesses.
* Australian Government Disaster Recovery Payment.
* Disaster Recovery Allowance[[21]](#footnote-21).

## We heard…

### Relief centre and community hub challenges

Once established and operational, relief centres and community hubs (both council-led and community-led) were able to provide effective and valuable assistance to communities through the provision of food and information, National Broadband Network access, welfare support and clothes washing. However, some factors hindered the success of these sites immediately following the event, with power outages, a lack of accessibility and communication gaps contributing to set up and operational delays. Additionally, once established, it was found that some of the centres lacked clear reporting structures and direction that is required to manage and support authorised volunteers effectively, including the management of spontaneous volunteers. There was considerable risk in the management and safety of spontaneous volunteers in potentially dangerous locations, such as breaching traffic management points.

### High levels of support for impacted communities

Some impacted communities expressed gratitude for the high levels of support they received from agencies and departments and other community members in the relief and early recovery phases of the event. Community members felt the local community came together in a time of need, through the supply and distribution of food, shelter, power, and services to those who needed it, as well as response agencies and councils with road clearance activities, providing

welfare and supporting the morale of personnel involved. Additionally, the support received from councils including green waste and debris collection sites was positively viewed and highlighted the extensive ground response undertaken by agencies and councils. The successful delivery of support was due to the high level of interoperability of councils with communities, other agencies, councils, and contractors.

### Concerns regarding Personal Hardship Assistance Program contact arrangements

Initial welfare calls made to community members by the Department of Families, Fairness and Housing and AusNet Services due to being listed as a power dependent customer or experiencing prolonged power outages were generally appreciated. This capability was enhanced when Victoria Police was engaged to support in person welfare checks. However, there seemed to be some engagement concerns from some community members due to their unfamiliarity with Department of Families, Fairness and Housing and the use of “no caller ID” numbers to contact people for over-the-phone Personal Hardship Assistance Program assessments, even though welfare calls and Personal Hardship Assistance Program assessments are undertaken using the same contact procedure. These concerns in answering “no caller ID” numbers resulted in initial contact delays and a significant volume of repeat calls to community members, and for those who did answer, some raised privacy concerns, particularly with the disclosure of personal details (e.g. bank details for payments). Due to the dispersed nature of impacts across the state and the concurrent COVID-19 pandemic, the Department of Families, Fairness and Housing quickly established an email address for community members to send enquiries to enable people to initiate contact with the department directly, supplementing the referrals to the department via councils.

### Accessing and navigating financial assistance (for businesses)

The event compounded the existing financial and psychosocial hardship businesses and community members were experiencing as a result of the COVID-19 pandemic. The widespread psychosocial effects of the event impacted communities to various degrees, with some residents and businesses delaying discussions about, and the undertaking of, the recovery process. Furthermore, some community members indicated the event exacerbated the significant financial hardship businesses were already suffering due to the COVID-19 pandemic, resulting in the accumulation of large debts and some cases insolvency. Some of this was attributable to the difficulties experienced by many businesses accessing or navigating relief payments (particularly those activated under the Disaster Recovery Funding Arrangements), as the provision of additional financial and other support did not always suit their specific needs and was felt to be inadaptable. Businesses were hindered by complex eligibility criteria (additional to COVID-19 grants), small business GST registration limitations, as well as a lack of information about the type of ongoing financial support available and the potential for eligibility during and following this event. During this time, businesses were also dealing with the outcomes of this event (such as tourism decline and loss of trade) on top of ongoing impacts from COVID-19 restrictions.

## What’s happened since…

The Victorian Government continues to address relief and recovery issues strategically and systematically, prioritising key re-occurring issues through an evidence based approach. The Victoria Government is making it easier for the sector to access financial assistance after an emergency by actively contributing to the Commonwealth review of the Disaster Recovery Funding Arrangements (DRFA). This work includes streamlining approval processes and developing off-the-shelf packages to assist with the prompt activation and delivery of assistance measures. In addition a new claims management system is being developed that will facilitate a quicker and easier process for councils to make claims. Improvements have also been made to the application process for Personal Hardship Assistance Payments. People impacted by a future storm or flood will be able to apply using a new contactless online form without the need to attend a relief centre, government office or council office in person.

In response to feedback received from some local councils about the volume of green waste that needed to be managed following the June storm event, Emergency Management Victoria worked with the Commonwealth to expand the type of costs that could be claimed by councils as part of their clean-up process. This included the ability for councils to be reimbursed for activities such as utilising green waste as fence posts or wood splitting that could then be redistributed back to the community, encouraging innovative and sustainable approaches to how councils deliver critical relief services.

### Case Study: Hepburn Shire Experience

The impacts across the Hepburn Shire as a result of the severe weather event were significant. The business centres of Daylesford and Trentham as well as the townships in-between sustained the majority of these impacts. The severity was largely due to their proximity to the Divide and their susceptibility to southerly winds.

In the early hours of Thursday 10 June 2021, command structures began to be formalised and an Incident Management Team was established. The Incident Management Team met hourly during the morning to understand the extent of the impacts and evaluate initial resourcing requirements.

During the initial 24 hours of the response, the extent of the impact on the Hepburn Shire Local Government Area was not immediately clear, and the true extent of the impacts only became evident in the days following the event.

**Storm effects on critical infrastructure:**

The township of Trentham experienced compounding infrastructure outages during this event, which gained a significant amount of media attention. The infrastructure failures across power, telecommunications and water services impacted the community significantly in terms of their ability to remain in place, source information and receive messaging. These outages also compromised the ability of agencies to respond to requests for assistance and communicate with one another effectively, which resulted in critical information and technical expertise not reaching local crews promptly. However, some services to Trentham were partially restored by 6pm on 10 June 2021, after access to the township was re-established, albeit restricted to essential personnel.

**Storm effects on road infrastructure:**

The significant impacts to road infrastructure were able to be addressed quickly, with the majority of Hepburn Shire managed roads being cleared of debris by late afternoon on 10 June 2021. This was possible due to the allocation of resources from Regional Roads Victoria as part of Department of Transport, who focused on clearing access roads to Trentham as a priority.

**Relief centre establishment:**

During this event, Hepburn Shire established a relief centre at the Mechanics Institute on High Street, Trentham. This centre operated for several days to support impacted community members and later transitioned into a recovery centre, which continued to be operated by staff from Hepburn Shire. During its time of operation, the relief centre was staffed 24/7 with additional resourcing and support provided by the neighbouring municipalities including the City of Ballarat, Central Goldfields Shire and Golden Plains Shire.

# Transition to recovery

Victoria’s emergency management arrangements in an emergency event comprise of three distinct, yet interdependent, phases; mitigation, response (including relief), and recovery. Mitigation encompasses activities needed to eliminate or reduce the incidents or severity of emergencies, and the minimisation of their effects[[22]](#footnote-22). Response (including relief) is the action taken immediately before, during and in the first period after an emergency to reduce the effects and consequences of the emergency on people, their livelihoods, wellbeing and property; on the environment; and to meet basic human needs[[23]](#footnote-23). Recovery means the assisting of persons and communities affected by emergencies to achieve a proper and effective level of functioning. The transition from response to recovery is a critical component of emergency management. The recovery from emergency events, such as the extreme weather event, can be prolonged, with long term impacts and significant economic and social costs to individuals, communities, and the Victorian Government.

The transition to recovery involves a process of de-escalation during an emergency event, in which response and control arrangements decrease, the incident, region and state tiers will lower their levels of activation, and the emergency management units and agencies within those tiers will scale down or deactivate. Whilst relief and recovery activities are integrated with the response activities and at all stages of emergency management planning, the transition to recovery occurs when emergency response activities have concluded and where recovery activities need to continue[[24]](#footnote-24). Whilst the emergency response is concluding and where recovery activities need to continue, the arrangements for managing the emergency will transition from response to recovery coordination[[25]](#footnote-25).

Considerations regarding the timing of the transition to recovery include:

* Significant emergency risks remain.
* The extent to which powers available to response agencies are still required.
* The effects and consequences of the emergency are not yet adequately known.
* Affected communities continue to need relief services.
* Recovery resources are not yet assembled and ready to undertake their roles.

Bushfire Recovery Victoria possessed the experience and skills required for recovery from emergency events following the support they are providing to the affected communities in the 2019 bushfires[[26]](#footnote-26). They established a regional presence to support councils in most storm affected areas between 18 to 21 June 2021, with the transition from response to recovery coordination formally commencing on 25 June 2021. During some emergencies, including this extreme weather event, there may be a legitimate need to commence recovery in some areas whilst the response phase and the provision of relief is still in operation in others. This is known as a phased transition to recovery[[27]](#footnote-27). The widespread nature of the event meant that many regions and communities, which experienced vastly different impacts from the event based on their geographical location, were at different stages of response, relief and recovery.

## We heard…

### Impacts to the community extend well past the event

After this event, the community demonstrated resilience and supported each other with clean-up activities. However, community members feel that due to the size and scale of this event, the clean-up and recovery process will take a considerable amount of time because of the amount of damage and quantity of work that still need to occur. Communities have raised concerns about the amount of debris on properties and in creeks as well as the number of potentially dangerous trees that remain in impacted areas and on private property. Although there was evidence the community supported each other in clean-up, some members continue to feel the physical and emotional impacts of this event due to its severity, the potential fire risk resulting from unremoved debris, and concerns of lack of follow up of support provided by agencies.

## What’s happened since…

The Victorian Government is continuing to drive change in relation to relief and recovery arrangements. This includes actions that aim to improve system-level aspects of Victoria’s relief and recovery arrangements, which have commenced in response to recommendations of the Inspector-General for Emergency Management Phase 2 report into progress and effectiveness of immediate relief and recovery arrangements following the 2019–20 fire season. These improvements will generate changes that will result in better outcomes for individuals, families, businesses and communities during both relief and recovery.

One of these actions already delivered is the Emergency Recovery Resource Portal that provides streamlined, centralised access to best practice guidance for recovery practitioners from government and community. The Emergency Recovery Resource Portal28 was launched in November 2021 and will be continually reviewed and improved. This work is aimed to improve capacity and capability for practitioners, and outcomes for communities recovering from emergencies.

Bushfire Recovery Victoria was established following the 2019-20 fires as the Victorian Government recognised the need for enduring support for community-led recovery. The role and remit of Bushfire Recovery Victoria expanded when the Emergency Management Commissioner asked Bushfire Recovery Victoria to coordinate recovery from the June 2021 extreme weather event. This role expanded further again in late September 2021, when Bushfire Recovery Victoria was delegated state and regional recovery responsibilities for all emergencies (excluding COVID-19 recovery).

The Victorian Government is working towards establishing a permanent and comprehensive recovery entity to drive system and state-wide improvements for recovery from all emergencies. The entity will lead the sector to address enduring challenges in our recovery arrangements and support better outcomes for our communities. In conjunction with the sector and community, the entity will also drive ongoing improvements that will build resilience during recovery towards future emergencies across the state, and tackle challenging recovery issues such as rebuilding, insurance and workforce capacity.

As announced in May 2022, Bushfire Recovery Victoria will expand its responsibilities and lead the state’s

recovery from major disasters to ensure that Victorian communities build back better, safer and stronger after emergencies. Soon to be known as Emergency Recovery Victoria, the agency will lead the long-term recovery process following all major emergencies, such as delivering key services to affected communities, planning, grants and investment, understanding local needs, and empowering communities to shape their recovery journey.

### Case Study: Walhalla Clean-Up Works

**Overview**

Walhalla is a popular tourist destination and attracts over 120,000 visitors every year despite having only around 20 permanent residents. It is the second most visited area in the Baw Baw Shire after the Baw Baw Alpine Ski Resort.

Between 9 and 10 June 2021, the mountain town of Walhalla in the Baw Baw Shire of Gippsland was drenched in more than 204mm of rain in less than 24 hours, causing flooding along the central Stringer’s Creek.

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The morning after the storm, residents found a trail of destruction through the town resulting in the need for a complex clean-up job. The storm had resulted in widespread damage including the destruction of stone retaining walls, road edges, car parks and reserves in Walhalla. The land was washed away in the Northern Gardens campground, power lines were brought down and main road access to the remote town was only restored when excavators were brought in to clear fallen trees off roads. The clean-up required after the storm was made more difficult by complex land ownership in the area and the town’s heritage overlay.

A meeting of the Walhalla community, hosted by Baw Baw Shire Council with support from Bushfire Recovery Victoria made it clear that a coordinated approach, involving all agencies and the community, was required to restore the main street in time for the tourist season with minimal disruption to permanent residents.

Bushfire Recovery Victoria brought together key agencies including:

* Baw Baw Shire Council (which formed and chaired a Community Recovery Committee).
* Regional Roads Victoria.
* Department of Environment, Land, Water and Planning.
* Department of Transport.
* Parks Victoria.
* West Gippsland Catchment Management Authority.

Together they planned a coordinated schedule of works, which included scheduling a pause to works and implementing interim safety measures, such as reduced speed limits, during the peak tourist season. On Friday 27 August, these agencies came together to walk the town. The walk-through included visits to four of the most significantly impacted sites and allowed the agencies to identify inter-related works and ensure nothing was missed.

Ongoing recovery works commenced on Stringer’s Creek on 1 September 2021, led by West Gippsland Catchment Management Authority with funding support from Department of Environment, Land, Water and Planning. Eco Projects Australia was engaged to remove debris and started stabilisation works almost immediately. Shortly after, Regional Roads Victoria began repairing damaged roads throughout the town. Works are underway, scheduled to be completed mid-2022 with an estimated $1 million of retaining walls to be constructed.

**What worked well**

**Cross-agency coordinated approach:** Bushfire Recovery Victoria exercised its role in recovery coordination by bringing together multiple stakeholders to clarify priorities and resolve issues when there were conflicts, divergences or gaps. Having Bushfire Recovery Victoria play a central coordination and facilitation role allowed other stakeholders to focus on the job at hand, which resulted in a coordinated schedule of works across several portfolios. This reduced disruption not only for the local community but also for visitors and campers.

**Community engagement:** Good engagement with the community, led by the council allowed the project stakeholders to understand the needs and priorities of the community and ensured the community understood the complexity of the works and could also feed into the clean-up process.

**What could be improved**

**Alternative community engagement:** While community engagement for the project was strong, the ongoing effects of the COVID-19 pandemic made it challenging at times to meet with the community on the ground and understand their needs and priorities early on. As a compromise, the council held virtual meetings with the community, but the project was still hampered by delays in being able to visit the affected area.

**Engagement mechanisms:** The establishment of a dedicated community recovery group in Walhalla would have streamlined community engagement and supported earlier engagement.

**What’s changed**

**Regional coordination:** Throughout this event, Bushfire Recovery Victoria has embedded regional coordination as a key component of their response, as per recommendations in the Inspector-General for Emergency Management’s Inquiry into the 2019-20 Victorian Fire Season Phase 2 report.

**A broader definition of community:** This response showcased that a community is not bound by its physical location or size. While Walhalla is a town of around 20 permanent residents, the four-wheel drive community is a key visitor that the town relies on. Considering the priorities of tourism and visitors to the area as part of the clean-up process has challenged the government to consider what community recovery truly means.

# Acronyms

|  |  |
| --- | --- |
| Acronym / Initialism | Description |
| ABC | Australian Broadcasting Corporation |
| ADF | Australian Defence Force |
| AGDRP | Australian Government Disaster Recovery Payment |
| ARC | Australian Red Cross |
| BoM | Bureau of Meteorology |
| BRV | Bushfire Recovery Victoria |
| CMA | Catchment Management Authority |
| COVID-19 | Coronavirus Disease 2019 |
| CRC | Community Recovery Committee |
| CSIRO | Commonwealth Scientific and Industrial Research Organisation |
| DELWP | Department of Environment, Land, Water and Planning |
| DFFH | Department of Families, Fairness and Housing |
| DH | Department of Health |
| DoT | Department of Transport |
| DRA | Disaster Recovery Allowance |
| DRFA | Disaster Recovery Funding Arrangements |
| EMA | Emergency Management Australia |
| EMC | Emergency Management Commissioner |
| EMV | Emergency Management Victoria |
| ERRP | Emergency Recovery Resource Portal |
| ESTA | Emergency Services Telecommunications Authority |
| GST | Goods and Services Tax |
| ICA | Insurance Council of Australia |
| IMT | Incident Management Team |
| LGA | Local Government Area |
| MFEP | Municipal Flood Emergency Plan |
| MOU | Memorandum of Understanding |
| NBN | National Broadband Network |
| NGO | Non-governmental organisation |
| NSW | New South Wales |
| OIL | Observations, Insights and Lessons |
| PHAP | Personal Hardship Assistance Program |
| PPOP | Prolonged Power Outage Payment |
| PV | Parks Victoria |
| RFA | Request for Assistance |
| RRV | Regional Roads Victoria |
| SCC | State Control Centre |
| STAND | Strengthening Telecommunications Against Natural Disasters |
| VCDI | Victorian Centre for Data Insights |
| VFMS | Victorian Floodplain Management Strategy |
| VICSES | Victoria State Emergency Service |

**Acknowledgement of Country**

Emergency Management Victoria acknowledges Aboriginal and Torres Strait Islander people as the Traditional Custodians of the land. Emergency Management Victoria also acknowledges and pays respect to the Elders, past and present and is committed to working with Aboriginal and Torres Strait Islander communities to achieve a shared vision of safer and more resilient communities.

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