

Submission to the Legislative Council Environment and Planning Committee Inquiry into Climate Resilience.

This submission is provided by the Emerald Village Association Incorporated (EVA).
It was approved for submission to the Inquiry at the EVA Committee meeting 26 June 2024.

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SUMMARY

1. The EVA appreciates the opportunity to make a submission.
2. The EVA is keen to present evidence at any hearing that the Inquiry holds.
3. The EVA submits that the Inquiry raises significant issues that must be addressed by the state government.
4. ***The EVA submits that the Emerald township and district provides an exceptional case study for the Parliamentary Committee to examine and report on.***
5. ***The EVA is pleased to invite the Committee to visit and inspect Emerald, to hear evidence and particularly to view and examine the issues that are raised in our submission. The EVA would assist the Inquiry in arranging a visit.***
6. The EVA notes the focus of the Inquiry:
 - The main risks facing Victoria's built environment and infrastructure from climate change.
 - Impacts these will have on the people of Victoria, including how the Government is preparing for these impacts.
 - The barriers in upgrading infrastructure to become more resilient to the impacts.
 - The preparedness for future climate disaster events.

The EVA submits that the focus of the Inquiry is highly appropriate. issues that are raised in this submission go to the core focus of the Inquiry.

7. In terms of the Inquiry's specific terms of reference, the EVA's response is in italics:
 - (a) the main risks facing Victoria's built environment and infrastructure from climate change and the impact these will have on the people of Victoria,
 - *the limited lack of preparedness and resilience of many people and many communities*
 - *the limited level of readiness and /or coordination by authorities and private service providers to the impacts of a major emergency event – e.g. information is available on websites – what if you have no mobile phone or internet coverage*
 - (b) how the Victorian Government is preparing for and mitigating the impacts of climate change on our built environment and infrastructure,
 - *the state government must hold relevant authorities and private service providers to account and set minimum standards of service delivery.*
 - *the state and relevant local governments must work with local communities to ensure that there is a community strategy and resilience plan in place, that has been co-designed with the community so that is owned by the community, that ensures greater*

awareness, knowledge and information about what community members need to do, what information they need, how vulnerable people can be looked after - not just those on the vulnerable persons register.

- (c) the barriers facing Victoria in upgrading infrastructure to become more resilient to the impacts of climate change, including barriers in rebuilding or retrofitting infrastructure, including but not limited to, issues relating to insurance and barriers faced by local government,
- *the current allocation of capital and recurrent funding appears to be seriously inadequate to the identified needs, e.g. tree asset management on key roads.*
 - *it is not apparent that there is an objective, transparent needs-based approach to funding allocation and priority setting.*
 - *too many different agencies and private entities involved with no clear apparent coordinating and accountability mechanism.*
- (d) the adequacy of the current Victorian planning system as it relates to its adaptation to preparation for, and mitigation of climate change impacts,
- *there is no substantive evidence that the planning system has systematically and comprehensively factored in adaptation to preparation for, and mitigation of climate change impacts in the preparation of planning schemes or the consideration of land use and development applications.*
 - *Planning schemes need to provide for the mandatory consideration of climate change impacts, and community resilience standards in the consideration of planning scheme amendments, applications for new uses, changes of use and development proposals including proposals for infrastructure provision by statutory authorities and private providers.*
- (e) what more could be done to better prepare Victoria's built environment and infrastructure, and therefore the community, for future climate disaster events,
- *minimum standards of service delivery and provision of services need to be set.*
 - *communities should be funded to prepare their own strategy and resilience plan.*
- (f) whether further inquiries or investigation may be needed into other aspects of climate change adaptation and climate disaster preparedness in Victoria, noting that climate change will have far-reaching impacts on all aspects of Victorian life, including but not limited to biodiversity, human health, primary production, industry, emergency services and more, and that while these areas may overlap with the matters covered in this Inquiry they may also warrant further investigation in their own inquiries.
- *the EVA supports widening the scope of the Inquiry to incorporate the range of items listed above and to focus on the preparation of locally relevant responses.*

The EVA provides a link below to its March 2024 Newsletter which provides information on the graphic impact of the February 13 storm event, the issues it raised and the immediate responses.

https://static1.squarespace.com/static/5b09458912b13f38032a4d1c/t/65ecee64ee19ea0e6783837d/1710026497108/EVA+News+%2345+March+2024-3-combined-compressed_6-compressed.pdf

DETAILED SUBMISSION

Background – The EVA

8. An Emerald Village Committee was formed over 20 years ago. Originally it was a Section 86 Committee of Cardinia Shire Council. In 2019 the Emerald Village Association Inc (EVA) was established. The EVA still has a close relationship with the Shire but is an independent incorporated body. The adopted purpose of the EVA is to:

- Strive to be the voice of Emerald, by representing and liaising with local groups and individuals so that matters of public interest can be identified and evaluated.
- Liaise with the Cardinia Shire Council and others on matters of public interest.
- Identify the unique strengths of the Emerald village community to build proposals from those strengths.
- Provide a conduit for all local organisations and community members to the Cardinia Shire Council, its CEO, Ward Councillors, staff, and representatives.
- Build and support a network of local community groups.
- Develop an annual business plan which clearly identifies objectives that EVA Inc. aims to achieve, and
- Promote specific community projects which will enhance the sustainability of Emerald village and the wellbeing of the community.

The EVA prioritises Emerald Village and surrounds as a liveable community with a strong attachment to its character and environmental setting.

There is a strong shared concern amongst the membership about climate change.

We want the Emerald Village community to be healthy, connected, and resilient. Our local businesses, community organisations and services are important ingredients of a prosperous, inclusive, and caring community.

The EVA is working on behalf of, and with the Emerald Village community in partnership with Council to develop a long-term Strategy, establish agreed long-term priorities for action to be a highly liveable community and an exemplar community-based organisation.

The EVA continues to build its profile, its relationship with the diverse range of groups and organisations in the Emerald Village and surrounds, and with the community generally.

- The EVA membership as of June 2024 is over 200.
- The EVA is continually upgrading its website, digital reach, and social media content.
- The EVA produces a substantial monthly newsletter which is now effectively a magazine for the community. We attach a copy of the Newsletter for March 2024 which sought to encapsulate some of the issues.
- At the 2021 Census the Emerald 3782 postcode area had a population of 5,890 - this was an increase of 112 persons from the last census in 2016. Median Age is 43 – in Victoria and Australia it is 38.

Background - Emerald and District

9. Emerald, together with its surrounding district, is a community on the southern edge of the Dandenong Ranges. It sits on a prominent ridge and commands views to Westernport Bay to the south, Mt Dandenong to the west and Donna Buang to the north. Located 50 kilometres east of Melbourne, Emerald is at the highest point on the Puffing Billy Railway line. This railway has great historic, cultural and social importance in establishing Emerald's identity and the district's forestry and horticultural heritage and now a key part of its tourism attraction. As the Melbourne metropolitan area expanded to the edges of the Dandenong Ranges, Emerald grew significantly as a residential community, most notably from the 1970s onward. Emerald's heritage, community-village character, liveability, and its forest and environmental setting, all have great appeal to the more than 6,000 people who choose to live here. With limitations on the density of development and fixed boundaries for the urban area, a further major population growth is unlikely. The population is slightly older than the average for Victoria, but there is also a high proportion of

young families. Motor vehicle dependence is high given the low density, dispersed nature of settlement and a high reliance on travel for work and higher order services. Emerald and district share many of these characteristics with similar communities across the Hills area.

10. Emerald possesses an extensive range of businesses and retail services, and it has a high degree of self-sufficiency, but limited employment options mean that many commute daily outside of the district. Emerald has a primary and secondary school, although many students also travel to schools outside the district. Emerald has an excellent range of well-constructed recreational, sporting and community facilities together with a library, the Hills Hub, and other venues. Community based organisations and groups such as U3A are strong. Emerald CFA and SES have well-resourced facilities but of course rely on volunteers. Emerald caters for many visitors, particularly on the weekend with the Emerald Lake Park and precinct including the Nobelius Heritage Park and the Puffing Billy playground in the centre of town being major attractions. Thousands, not just Melburnians, but many from overseas, come each week to the Lake by car and to the Lakeside Station complex by the Puffing Billy Railway.

The impact of Events

11. In many communities an event occurs which sharpens the focus and causes the community to re-evaluate their priorities, question the way things are done and re-orientate their priorities. The impact of the 1983 bushfire on the Emerald community has had a long-lasting impact. Bushfires while not welcome of course, are well-known, there are many measures and plans in place, they are largely 'predictable' and increasingly there are lead times in place for people to prepare and act.
12. A major storm event in 2021 across much of the Dandenong Ranges had a devastating impact on many communities including Emerald and caused many people to re-evaluate their priorities.

The Storm Event of February 13, 2024.

13. The February 13, 2024, storm event was of such severity and was completely unprecedented. This second severe storm event following so soon after the 2021 created alarm and an increased sense of urgency. It challenged the Emerald community to think and act differently. The ferocity of the event, the destruction and failure of multiple infrastructure services, the widespread impact on the functioning of the community and the apparent unpreparedness of so many people, businesses, and relevant authorities and agencies to cope, raised the inadequacy of the current arrangements.
14. The storm event had significant impacts across Emerald and district communities. Referred to as a mini tornado, it caused major disruptions to people's health and wellbeing, impacted businesses and the local economy and damaged infrastructure. The general growing realisation of weather unpredictability associated with climate change has further galvanised the community. It has raised questions, generated meetings, petitions, community-based discussions, and highlighted deep-seated concerns about the resilience of the community, the adequacy, type and sustainability of infrastructure that residents, businesses and emergency services rely upon. It has brought home the vulnerability of all residents, but particularly the aged, those with disabilities, those living alone and those without private transport.
15. The impacts of the storm were many:
 - the immediate realisation of the vulnerability of Emerald and district and the wider hills community and particularly those who are vulnerable (not just those on the vulnerable persons register), the aged, young families and those with disabilities,
 - the reliance (over-reliance) on essential services (electricity, mobile phone, internet) and lack of resilience in our infrastructure and services to the impacts of storm events,

- the apparent limitations to address issues by various responsible public and particularly privatised bodies,
 - the need for greater community awareness and action in response to these types of events.
 - the likelihood that climate change will increase the frequency of such events.
16. Residents and businesses have been inundated with information and ‘solutions.’ However, we have found that access to reliable information, and accountability for services and actions can be a confusing jumble of organisations, private and public. This has raised questions about who is undertaking what action, who is giving directions, providing services and to what standard, and who is responsible for rebuilding infrastructure networks and creating greater resilience. People are confused by issues of demarcation between service providers, lines of accountability and actual responsibilities. Gaining clear and reliable information and an accurate line of sight has often been difficult and repeatedly frustrating.
 17. The EVA recognises that a strategy for the future needs to comprehensively embrace greater resilience in our infrastructure, and in our community capacity to better ensure the safety of all people. We need to raise awareness locally and state-wide just how critical reliable power, mobile phone cover and internet are and why we need safe roads and vehicle access. These issues aren’t peculiar to Emerald, they are shared across the communities of the Ranges, a community of up to 100,000 people. The EVA recognises that there is greater strength in working collaboratively with other communities who face the same agenda.
 18. Above all, the EVA has recognised that all communities and individuals also bear their own responsibilities. We must show that we are not only proactive but prepared to listen, and when we have the facts, act on them. We need more than short-term knee-jerk reactions to events and threats. We need a long-term plan built on local consensus and external support, with clarity as to what we can do and importantly what can we rely upon. What are the service obligations of those organisations we depend upon? How best can we disseminate reliable, up to date, and accurate information to our community? What needs to happen in emergency situations, and significantly how do our community, our households and families ensure that they are as well prepared as possible and know what to do in an emergency?
 19. The storm event was unprecedented in its ferocity and the damage it caused in a very short period. Widespread areas of Victoria were impacted. Few areas in the state suffered the level of damage and disruption to infrastructure that was experienced in Emerald and district. As soon as the storm had passed it was apparent that not only were hundreds of trees down blocking roads and driveways and impacting buildings, but that electricity, internet, landline phones and in some cases water supplies were knocked out of action. When the scale of the area impacted was clear there was a quick realisation that these services for households and businesses were likely to be disrupted for a considerable period. Confusion reigned. After the initial shock, as the community tried to come to terms with what had happened, there was a growing realisation that not only had all the community and volunteer services been placed under an enormous strain, but that statutory and private service providers were struggling to come to the terms with the enormity of the event and its ramifications.
 20. There was growing and widespread uncertainty about what was happening, this turned to frustration and resentment as reliable information could not be sourced and many public and private sector infrastructure and service providers seemed to have little clear direction as to what was happening and how they were to respond. The gap between what the community expected and required and what was provided seemed to be widening. As the community reflected on the impact and the disruption, they realised how vulnerable they were, and how the impact was in many respects beyond that experienced storm events in 2021. The ongoing threat of bushfire and the overall vulnerability of communities in the Dandenong Ranges to power and internet outages, the closure of roads, the potential isolation of towns and individual households and the high level

of reliance on motor vehicles were brought dramatically to light. No longer was it an option to sit back as a community and wait for action.

21. The storm events have raised several strategic planning and traffic management issues and the need for a forward - looking planned approach. The EVA is keen to work with Council and its relevant departments and officers to prepare a strategic development plan and a series of actions which will progressively address these circumstances and opportunities.
22. Recent dramatic weather events have highlighted the vulnerability and severe community safety issues for Emerald Township in the event of a major emergency. Essentially Emerald Township is reliant on a single two-lane road (Belgrave – Gembrook Road) for traffic movement through the township. This road is severely congested at the morning and afternoon peaks on weekdays, and at times on the weekend with tourist traffic. The storm event of February 2024 highlighted the dependence on this road, as have previous dramatic weather events and bushfires. There are only three roads in and out of Emerald,
 - the Beaconsfield Road,
 - the Monbulk Road, and
 - the Belgrave – Gembrook Road (to the east and the west).

If any of these roads are blocked by fallen trees or a major accident, the capacity of the road system and town to function is severely tested. The circumstance would be particularly chaotic if the Belgrave Gembrook Road was blocked between the Kilvington Drive roundabout and the Beaconsfield and/or Monbulk Road roundabouts. There are only two other options for movement through the town if that occurred, use the one-way system of Heroes Ave and Kings Road (both already congested with school pick up traffic and Kings Road now supports considerable medium density housing) or use Madigan Way (unsealed and very narrow). Compounding this whole situation is the reliance on traffic movement on the Belgrave Gembrook Road by a series of facilities and services that are located on this road, or require access to this road, Police, CFA, SES, Ambulance, Emerald Primary School, Emerald Secondary College, Child Care Centres, Medical Practitioners and so on.

23. A bushfire, is of course, potentially the greatest threat and the leave early policy applies, but a storm event is less predictable. There has been considerable speculation about the timing of the storm event and the greater chaos that would have happened if it occurred say on a weekend with literally hundreds of tourists trapped at Emerald Lake Park, tourists on Puffing Billy unable to get out of the township because the line was blocked and who were reliant on buses that couldn't get in or out of the town. Of course, the storm event highlighted the problems caused by loss of electricity and internet services that compounded the issues.
24. The current 2009 Strategy Plan and the Planning Scheme zoning provides for and supports mixed use development along the undeveloped section of the northern side of Belgrave – Gembrook Road. There is a dozen lots potentially able to be developed or redeveloped. The Council policy is that these uses would be generating traffic that will be serviced by access and car parking using Madigan Way. As Council is aware Madigan Way has severe limitations, the width of the road reserve is very restrictive, it has pinch points at both entry points, the intersections at Ferres Road and the Monbulk Road are constrained by traffic conditions and existing land uses. Madigan Way was never designed to be a two way through road nor to act as a relief road if the Main Road was blocked. Madigan Way is increasingly being used a 'rat run' in peak traffic conditions.
25. Recent events and developments have clearly identified that the Planning Scheme facilitates cannot be adequately supported by the road system and the constraints that are operating. This, together with the situation in the event of an emergency, has highlighted the urgent need for Council to work with the EVA, the wider community and land owners to develop a comprehensive

Strategic Plan to address the issues described above and to facilitate quality development that complements the township.

What the EVA did in Response to the Impact of the Storm

26. The EVA sought to act as a lead community-based organisation on behalf of Emerald and district. Members of the EVA Committee met, discussed, and agreed on an overall course of action. The EVA already had a scheduled community meeting with our local Member of Parliament, Ms Daniela De Martino. This provided an excellent community forum on the storm, its impact, and the responses by various organisations. This was attended by about 60 people and representatives from several key bodies. She was able to outline several actions that were being taken and to clarify roles and responsibilities. This was followed by a community forum which provided an opportunity to hear directly from various service organisations who responded to many community concerns. On 3 April the EVA convened a meeting which led to the formation of an Action Group which held its first meeting on 17 April convening as the Energy and Communications Resilience in the Hills Region Working Group (Resilience Working Group).
27. Specifically relating to this Inquiry and its Terms of Reference
- (d) the adequacy of the current Victorian planning system as it relates to its adaptation to preparation for, and mitigation of climate change impacts, and*
 - (e) what more could be done to better prepare Victoria's built environment and infrastructure, and therefore the community, for future climate disaster events*

The work of the Resilience Working Group has raised many questions and points of issue, these are summarised below.

- The Planning and Environment Act and the various planning schemes implementing the Act do little to facilitate the delivery of robust and resilient liveability in a climate change era, let alone specifically in the Hills area of outer Melbourne and other non-urban areas.
- The Act in its Objectives provides the scope and intent for robust and resilient liveability, but it is simply not being applied.
- Given that all Public and Private Sector developments are required to go through a planning approval process then the Strategies and Master Plans of these Organisations need to be current and up to date.
- Strategies and Master Plans need to go through an approval process and be incorporated in the Planning Scheme so that the Projects are being detailed and endorsed. Robust and resilient built environment and infrastructure is a matter of compliance with Technical Standards and up to date Design Guides.
- Does the Act and Planning Schemes reference compliance with all the relevant Technical Standards and Best Practice Asset Management Guides?
- If the Inquiry is serious in ensuring that the Planning system is adequate to meet the challenges of Climate Change, then *all* the Strategies and Master Plans need to be current and up to date. That is, reviewed regularly.
- For the Hills community there is need for the Planning process to deliver a built environment and infrastructure that enables liveability from “cradle to grave”. Both as an asset and also for the community generally.

- The EVA narrative highlights that the Hills area is high risk and needs a more robust approach to Planning and implementation of projects as well as the management of the natural and the built environment.
- From a planning perspective there are needs of a holistic approach to asset creation so that Planning Approvals require long term management plans and that the Asset Owners are obliged to effectively manage the asset being created.
- In the recent storm events in the Hills area, it has become clear that the natural environment (roadside vegetation) and trees on private and public property are not properly maintained, causing much damage when a major incident occurs. This poor environmental vegetation asset management coupled with poor decisions in managing risks in the Hills area, exacerbates the impact of our changing climate.
- It is our understanding that \$40 million is allocated nationally for undergrounding (retrofitting) powerlines, yet the practice of undergrounding in new developments has been the standard for more than 50 years.
- The common approach by numerous authorities and some uninformed residents are to demand that whole scale trees be removal along powerlines routes rather than effective management of roadside vegetation or forested areas where these powerline routes traverse.
- What this suggests is that the Planning Process needs to be robust and enabling the Planning and Responsible Authority to require effective Risk management and resilient development of our built environment.
- The upgrading of a roadway, service renewal (power, water, sewerage, telecommunications etc.) need to accommodate whole of life management of the asset and not at the expense of the natural environment or the land through which those assets traverse. Consideration needs to be balanced between the need for the new development and the broader wellbeing of the community, and not at the expense of the natural environment.
- Another issue that emerged in the February 2024 storm event is the impact on the vulnerable persons in our community.
- The need to better define vulnerable persons is paramount. Not just those with medical conditions, but the homeless, the aged, the infirm, and those without transport were seriously impacted. We are developing an issues paper regarding "Vulnerable Persons" and hopefully we will have some criteria for Responsible Authorities to evaluate.
- Power outages in our Hills area were lengthy, communications were out for days because of the power outages. The Planning process needs to require an "in built resilience" for new communication towers so that they can remain in service when the power outage occurs.
- Many telecommunications lines piggyback on the overhead powerline poles and are also vulnerable to trees falling. In the high-risk Hills area, undergrounding is minimal and fails to function when there is a power outage. Most households have a modem, but these do not function if the power is out.
- Undergrounding and having its own power system as used to be with the old phone lines would render the service more resilient with Climate Change.

- How the Planning process might assist is for a requirement/condition be necessary that "it be resilient and not reliant on another service provider, i.e.. have its own power supply. The old technology/phone landline.
- In delivering resilience to the community, the Planning process needs to be enabling so that back-up systems, e.g. solar panels, batteries & generators, can be approved and installed.
- It is suggested that the process should require that there is a consultative process, and hence a planned strategic path be pursued by the service delivery Agency and/or Responsible Authority.
- Long term Plans, supported by Standards and Guides, need to be in place and be adhered to so that community input and concerns can be addressed without unnecessary delays or frustrations. We would argue that communication plans could be required as part of the planning approval process so that the community is effectively informed.
- Business Continuity Plans should be a requirement within the Planning process so that all the elements of Resilience can be tested by the Statutory Approval Authority.
- We strongly urge the development a list of "resilience measures" and that these be adhered to before any Planning and Environment consent is issued.

28. In summary the work of the EVA Resilience Working Group has

- Led to the identification of Community Members with professional skills in relation to developing Community Emergency Plans.
- Identified the need for more comprehensive and extensive information on storm behaviours, preparation and "what to do" needing to be compiled and widely distributed (along the lines of Bushfire information).
- Strengthened the need for planned and organised collaboration between Township Groups.
- Pinpointed the need for digital emergency information noticeboards at all Township entry points (roadside).
- Reinforced a need for intergenerational education on resilience strategies and techniques.

29. In terms of ongoing action, at the 26 June EVA Committee meeting it was agreed to prioritise the following actions.

- Set up a Vulnerable Persons List inclusive of lists from Police and Council etc. The objective is to identify disabled people and their carers (Information is also available from the State Government palliative care Vic) and homeless people and 'couch surfers'. Prepare an Issues Paper on topic.
- Authorise the Resilience Group to investigate the requirements for a submission to AusNet.
- Support the application for a grant to fund a project for infrastructure for a Community Emergency Hub in Emerald and support the application for similar projects in other Hills townships.
- Liaise with key people in each of the nearby Hills' towns. These being: Gary McGough and Dave Tracey Gembrook/ Rachele Michaelson and Catherine Gardiner of EST Cockatoo, Ian Conibear

& Ron Harmer Emerald, Frank Archer and Caroline Spencer Guys Hill Upper Beaconsfield, Fiona Sewell Macclesfield, Stewart Matulis and Mark Carter Cardinia Council's Emergency Management and Response teams.

- Investigate securing the appropriate engineering and project management expertise with the necessary experience to oversee the whole exercise.
- Investigate the requirements for a submission to AusNet for a second small grant to fund development and production of a Community Resilience Plan for Emerald, and Emergency Information kits for distribution to the community.

30. The efforts of the EVA Resilience Working Group have identified many matters where the inadequate provision of infrastructure is impacting communities and not ensuring a level of resilience that communities could reasonably expect. The following lists a number of examples.

The EVA identified the need for:

- information on what resources is available in an emergency and how they will be deployed.
- minimum set of standards and resources that enable these to be achieved, e.g. how many days is an acceptable time to be without power?
- a set of performance standards for the Essential Services? Are these already available? Power Outages - Can we suggest minimums and reasonable penalties for outages exceeding minimum standards.
- a recovery process that is integrated into the response process so that there is a degree of continuity, rather than a separate set of actions that simply delay, duplicate and waste public resources, cost more and impacts negatively on the community's health and well-being.
- an Education Program to inform our local communities of Resilience Plans, Strategies and Communication Plans before, during and after a significant incident. It was noted that the DEECA funded energy resilience solutions are yet to be deployed in Emerald. Given that it took days to provide power to the Worrell Reserve Relief Centre and the Emerald Hills and Library Hub the deployment of the energy backup system should be prioritised.

Specific Findings and Actions from the Work of the EVA Resilience Working Group

31. Loss of all phone and internet communications was a key problem for Emerald residents following the February 2024 storm event. The recommendations from the Electricity Distribution Network Resilience Review have either not occurred or are insufficient. Specifically progress of the Strengthening Telecommunications Against Natural Disasters (STAND) program and the Mobile Network Hardening Program in relation to Emerald and surrounds should be reviewed and alternative solutions to improve telecommunication backup power supplies considered. Because of the loss of phone and internet communications Emerald residents did not have access to AusNet SMS messages or the AusNet Outage Tracker. Further to this there were technical difficulties with the AusNet Outage Tracker and AusNet was unable to update information.
32. Vegetation management compliance of both AusNet Services and Cardinia Shire Council needs to be improved as a key risk management measure.
- i. Energy Safe Victoria should undertake a hazard tree inspection in the Emerald area as a priority if it has not already.
 - ii. Power Outages could be avoided by undergrounding high risk power lines. There is an opportunity for government, AusNet and local council to work together to determine the high-risk power lines in the Emerald area and consider undergrounding options in a scaled down version of the approach taken by the Government of Western Australian, Western Power and local governments in implementing the State Underground Power Program.

33. An Electricity Distribution Network Resilience Review¹ was undertaken in response to the June and October 2021 storms and made eight recommendations to reduce both the likelihood and impact of prolonged power outages. As per the Government Response to the Review² the vast majority of the Expert Panel’s recommendations to boost network and community resilience were supported.
- i. While it is noted that the function of the current Network Outage Review is to provide recommendations that supplement and avoid duplication with the Electricity Distribution Network Resilience Review, given that Emerald residents experiences following the February 2024 storm event were the same and sometimes worse than the 2021 storm events can the Network Outage Review Panel please consider the following information and/or queries as part of their review.
 - ii. In response to Recommendation 1, DEECA funded energy resilience solutions. These include energy backup systems for essential services and community hubs, including rooftop solar, batteries and diesel generators. While the community is aware that AusNet is working with DEECA and the Cardinia Shire Council to deliver these systems at Worrell Recreation Reserve in Emerald, Gembrook Community Centre and Cockatoo Recreation Reserve. It is important that the Network Outage Review panel understand that following the February 2024 storm event Emerald residents were unable to access information at central community hubs as the buildings were without power. A generator was supplied to the Worrell Reserve Relief Centre in Emerald two days after the storm event and power was not restored to the Emerald Hills and Library Hub until four days after the storm event. In light of this can the Network Outage Review panel find out the exact installation completion date for energy backup systems in the Emerald area.
 - iii. Based on the Government Response to the Review Recommendation 1 was limited to only delivering energy backup systems as solutions. Were any other solutions or measures considered for investment? A cost benefit analysis for DEECA’s Energy Resilience Solutions³ does not appear to be publicly available – can a copy be shared?
 - iv. Following the June 2021 and October 2021 storms the Electricity Distribution Network Resilience Review Panel “heard from affected residents and whole communities that a key problem was the loss of all phone and internet communications due to these systems having limited redundancy to prolonged power outages. Many were unable to contact services or family and friends to check on welfare, request assistance or receive updates from distribution businesses.”¹ In particular, “communities reported that the telecommunications network failures (that occurred as result of the power outages) were one of the most distressing aspects of their experience in the June and October storms, with many residents cut off for several days, unable to contact loved ones or call 000.”¹
 - v. Following the February 2024 storm, Emerald residents once again had the same experience with communications, with many once again cut off for several days and unable to make calls or use the internet. This means the recommendations and measures undertaken in relation to remedying this have not yet occurred or are insufficient.
 - vi. The Electricity Distribution Network Resilience Review noted for the 2021 storm events that “faster restoration of telecommunications assets, or longer lasting back up power (or both) would have reduced risks and improved the community’s experience of the outage” and noted that a number of measures were underway which included the Strengthening Telecommunications Against Natural Disasters (STAND) program, and the Mobile Network Hardening Program aimed at improving

¹ https://www.energy.vic.gov.au/_data/assets/pdf_file/0030/594930/network-resilience-review-final-recommendations-report.pdf

² https://www.energy.vic.gov.au/_data/assets/pdf_file/0026/680822/government-response-to-the-electricity-distribution-network-resilience-review.pdf

³ <https://energy.vic.gov.au/renewable-energy/microgrids>

the resiliency of mobile base station infrastructure by extending battery backup power to at least 12 hours.

- vii. Gembrook North was one of the mobile base stations provided with funding in Round 1 of the Mobile Network Hardening Program. Can the Network Outage Review Panel find out whether the upgrades at Gembrook North have been completed yet and if not when they will be? Further to this can the Network Outage Review Panel help the Emerald community in identifying whether upgrades at the Selby mobile station at Black Hill Bushland Reserve and the Camms Road mobile base station near Monbulk would improve mobile phone coverage for Emerald residents during a prolonged power outage?
- viii. It is very clear that there is a need for telecommunication providers to supply timely backup power in the event of broadscale power outages and increasing backup power supply operation at base stations to at least 12 hours when the power outage lasts for days is not really a sufficient solution. As a way of improving backup power supply can consideration be given to deploying a solution like the Hybrid Power Cube that combines solar panels, battery and compact diesel generators and has been deployed by the NBN on a number of sites in Queensland⁴?
- ix. NBN has a diverse emergency management fleet⁵ that includes Wireless Mast Trailers and Telstra deployed STAND generators in Mirboo North following the February 2024 storm event. Emerald residents have no visibility of any such solutions being deployed to improve communications in and around Emerald. Can the Network Outage Review Panel find out if any such solutions were deployed following the February 2024 storm event? If they were not, should they have been deployed as a way of improving communications for Emerald residents?
- x. Based on the terms of reference⁶ the Network Outage Review Panel is to provide recommendations on distribution businesses “tools and systems to communicate proactively with customers and external authorities, including SMS, call centres and effective information platforms and services, such as outage trackers.” Because of the loss of phone and internet communications Emerald residents could not access these tools and systems. Further to this as noted in a community information session held on 20th February 2024 the AusNet Outage Tracker experienced technical difficulties and AusNet was unable to update information and the temporary Outage Tracker platform did not allow AusNet to accurately link customers with their incident numbers⁷.

34. Energy Safe Victoria (ESV) details that vegetation around powerlines is supposed to be managed by electricity distribution businesses or local councils. According to Energy Safe Victoria’s 2023 Safety Performance Report on Victorian Electricity Networks⁸ there were increases in the average rate of non-compliant vegetation detected on the AusNet network. Can the Network Outage Review Panel find out from AusNet what immediate and medium-term actions they will be undertaking to improve compliance particularly in the Emerald area?

35. It is understood that councils are responsible for maintaining clearance of trees located on public land managed by the council. Emerald residents have not witnessed Cardinia Shire Council undertaking tree trimming or other vegetation management works and can identify locations where they believe there may non-compliant vegetation. The last publicly available information of ESV having completed an inspection within Cardinia Shire Council was in 2020-2021 and the council

⁴ <https://minister.infrastructure.gov.au/rowland/media-release/keeping-regional-queenslanders-connected-emergencies>

⁵ <https://www.nbnco.com.au/blog/the-nbn-project/innovation-key-to-emergency-management-fleet>

⁶ https://www.energy.vic.gov.au/_data/assets/pdf_file/0038/698078/terms-of-reference-network-outage-review-system-response-to-13-feb-storms.pdf

⁷ https://www.cardinia.vic.gov.au/info/20049/recovery_information/1094/february_2024_community_information_session_for_storm-affected_residents_%E2%80%93_questions_and_answers#section-3-questions-and-answers

⁸ <https://content.esv.vic.gov.au/sites/default/files/2023-12/2023-safety-performance-report-on-victorian-electricity-networks.pdf>

had a 25% non-compliance rate⁹ at this time. Is it possible for the Network Outage Review panel to find out whether ESV intend to undertake inspections to determine whether Cardinia Shire Council are compliant with their responsibilities for maintaining clearance of trees and vegetation in accordance with the requirements of the Electricity Safety (Electric Line Clearance) Regulations 2020 in the near future? This would be an appropriate measure to minimise the risk of fallen trees for a future storm event.

36. ESV states that most network incidents involving vegetation are due to trees, or parts of trees, falling onto electric lines from outside the minimum clearance space. Such trees are often referred to as hazard trees and it is understood that ESV has incorporated hazard tree inspections into its regime of safety regulation programs as an ongoing program of inspection. Is it possible for the Network Outage Review panel to find out the timing and recurrence of any such inspections in the Emerald area and share this information with the community as a way of providing visibility of the plans in place to manage the risks posed by hazard trees?
37. Currently there is no requirement for councils to submit Electric Line Clearance Management Plans (ELCMP) to ESV unless requested to do so. The Emerald community feels that given the current state of vegetation management in Emerald it would be prudent to consider making it a requirement for certain councils to submit a ELCMP for approval by ESV. Or at the very least priority be given to undertaking a review of Cardinia Shire Councils ELCMP to determine whether they have sufficient management oversight of the contractors used to perform electric line clearance works and audits to ensure appropriate clearance standards are achieved when the contractors complete the electric line clearance work. Emerald is an area with high vegetation density with hilly and steep terrain in many areas. The reality is that even with appropriate vegetation management future storm events in Emerald will result in fallen trees which will result in loss of power and/or communications depending on their backup power supply arrangements. Based on the hierarchy of controls there are the following options for managing risks in relation to power outages.
38. The proposal is not to underground all of AusNet's distribution network, instead Emerald residents request that the Network Outage Review Panel encourage engagement between government, AusNet and council to undertake a dedicated Prolonged Power Outage Risk Assessment (PPORA) for the Emerald area. AusNet should have information detailing the impacted lines and duration that certain lines were out for to assist in determining the highest risk power lines in the Emerald area. This information could then be used to determine the options and costs for undergrounding certain sections of power lines whether 22 kV distribution lines of LV Aerial bare wire or Aerial Bundled cable lines. A cost benefit analysis can then be undertaken with consideration given not only to the undergrounding cost but also the lifecycle costs of implementing such a solution.
39. Some additional distribution network reliability information is included in Attachment A. This includes a table that compares the reliability of different distribution network service providers (DNSPs) in ACT, NSW and Victoria. It should be noted that those with a greater proportion of their network underground have higher network reliability with shorter outage durations and less interruptions per customer.
40. A very simple cost analysis is included in Attachment B. This shows the high-level cost of the power outages in Emerald in June 2021, October 2021 and February 2024. These are the costs covered by the government who funds the Prolonged Power Outage Payment, the costs covered by AusNet under their Energy Resilience Community Fund and the storm repair costs expected to be recovered via consumers via an approved AER cost pass through. It does not include other economic costs such as insurance claims, fuel costs for diesel generators or intangible costs related to mental health, chronic disease or physical injury.
41. Attachment B also shows a high-level cost of undergrounding up to 20 km of high-risk power lines including the cost savings over a 10 year period (e.g. lower maintenance costs, avoided vegetation management). A more detailed analysis would need to be undertaken however this initial data shows that if targeted undergrounding of high-risk power lines were undertaken prior to the 2021 storms the overall cost would be less than the cost of the 2021 and 2024 power outage costs (for Emerald).

⁹ <https://content.esv.vic.gov.au/sites/default/files/2024-03/2021-safety-performance-report-victorian-electricity-networks.pdf>

Attachment A – DNSP Network Reliability data

DNSP	State	Total circuit length (km)	Overhead circuit length (km)	Proportion of OHL	Underground circuit length (km)	Proportion of UG
Evoenergy	ACT	4828	2301	48%	2527	52%
Ausgrid	NSW	42714	25933	61%	16781	39%
Endeavour Energy	NSW	39622	22825	58%	16797	42%
Essential Energy	NSW	193124	183057	95%	10066	5%
AusNet (D)	VIC	46043	38086	83%	7957	17%
CitiPower	VIC	4578	2261	49%	2317	51%
Jemena Electricity	VIC	6818	4496	66%	2322	34%
Powercor Australia	VIC	76999	68765	89%	8234	11%
United Energy	VIC	13475	10020	74%	3455	26%

1. Data extracted from AER Electricity DNSP Operational performance data 2006-2022, version 6 published 21 July 2023¹⁰
2. Outage duration is measured using a System Average Interruption Duration Index (SAIDI). This shows the average length of time each customer was without supply when averaged over all customers in the distribution network. This data does not include outages caused by force majeure events or other outages primarily caused or initiated by third parties. Aggregate data has been weighted by each network's customer numbers.
3. Outage frequency is measured using a System Average Interruption Frequency Index (SAIFI). This shows the number of supply interruptions each customer experienced in a year when averaged over all customers on the distribution network. This data does not include outages caused by force majeure events or other outages primarily caused or initiated by third parties. Aggregate data has been weighted by each network's customer numbers.

Attachment B – Simple cost analysis

Item	June 2021 storm event cost	October 2021 storm event cost
Prolonged Power Outage Payment (house)		
Prolonged Power Outage Payment (small business)		
AusNet Energy Resilience Community Fund (house)		
AusNet Energy Resilience Community Fund (small business)		
AusNet storm repair cost	\$371,602	\$57,026
	\$371,602	\$57,026

Total power outage cost of 2021 and 2024 storms for Emerald = \$5,478,752

1. According to 2021 data there are 2186 households in Emerald (population 5890).
2. Emerald residents were without power for > 72 hours following the February 2024 storm event, for this analysis it is assumed that approximately 2000 households and 50 small businesses would have claimed both the Prolonged Power Outage Payment (\$1920 per week per household and \$2927 per week per small business), along with support from the AusNet Energy Resilience Community Fund (residential customers - \$300 grant and business customers a \$5000 grant)

¹⁰ <https://www.aer.gov.au/system/files/AER%20-%20Electricity-DNSP-Operational%20performance%20data%202006-2022.xlsx>

3. AusNet June 2021 storm event cost pass through application approved by AER for \$39,098,155¹¹ whereby over 230,000 customers were affected. Equivalent cost is \$170 per customer. For 2186 Emerald customers this is \$371,602
4. AusNet October 2021 storm event cost pass through application approved by AER for \$6,166,728¹² whereby over 230,000 customers were affected. Equivalent cost is \$26 per customer. For 2186 Emerald customers this is \$57,026
5. Given that it is too early to know the storm repair costs that will be attributable to the February 2024 storm event an average of the June 2021 and October 2021 storm events is assumed giving \$214,314 for 2186 Emerald customers

Item
Undergrounding of 20 km of a combination of 22 kV and LV high risk power lines
Avoided vegetation management over 10 years
Lower maintenance costs
Total cost of undergrounding 20 km of high risk power lines and operating over 10 years

Total cost of underground 20 km of high-risk power lines in Emerald = \$4,820,204

1. Assuming the total length of high-risk power lines in the Emerald area is 20 km
2. Assuming underground costs based on a unit cost of \$262,864/km¹³ taken from the Powerline Bushfire Safety Program Benefits Realisation Report that included a Powerline Replacement Fund that involved undergrounding HV powerlines
3. Vegetation management cost based on AusNet cost of \$1100/km/year¹⁴
4. Maintenance cost based on Ausnet CAPEX of \$5495/km/year and a 20% reduction factor based on data from the Inquiry into Statue Underground Power Program Cost Benefit Study pg.28

¹¹ <https://www.aer.gov.au/industry/networks/cost-pass-throughs/ausnet-services-cost-pass-through-june-2021-storms-natural-disaster>

¹² <https://www.aer.gov.au/documents/aer-determination-ausnet-services-october-2021-storm-cost-pass-through-june-2022>

¹³ https://www.energy.vic.gov.au/_data/assets/pdf_file/0032/608675/BR-Report.pdf

¹⁴ <https://www.aer.gov.au/documents/aer-electricity-network-performance-report-2023-july-2023>