AUSTRALIAN BUSINESS ROUNDTABLE
for Disaster Resilience
& Safer Communities

4 May 2020

SA Fire & Emergency Services Commission
South Australian 2019-2020 Bushfire Review
GPO Box 2706 Adelaide SA 5001

Via email: BushfireReviewSubmissions@sa.gov.au

Dear SA Fire & Emergency Services Commission:

The Australian Business Roundtable for Disaster Resilience & Safer Communities (ABR) welcomes the opportunity to make a submission to the Government of South Australia's *2019-2020 Bushfire Review*.

The ABR was formed in December 2012 by business and organisational leaders with a shared vision to ensure that communities across Australia are better able to prepare for, respond to and recover from natural disasters.

Current members, leaders from Australian Red Cross, IAG, Munich Re, Optus and Westpac Group, represent a cross section of the Australian economy. Each member organisation of the ABR plays a crucial role in community planning or disaster recovery and all support customers and communities affected by floods, storms and bushfires.

The ABR's primary objective is to make Australian communities safer by improving disaster resilience and climate change preparedness. We do this by expanding knowledge, collaborating and leading by example to help influence decisions made by governments, businesses and communities.

The ABR has commissioned five independent research reports providing clear evidence of the increasing costs of natural disasters and specific recommendations that, if implemented, would minimise the devastation and costs of these type of disasters and make Australian communities more resilient.

This submission responds to specific factors in the Terms of Reference reflecting ABR research and member experiences in prevention, preparation and recovery.

Increasing risk and cost of bushfires

Australian communities are exposed to just about every natural hazard, from earthquakes to storms and cyclones, to bushfires and devastating floods[1].

Bushfire is an inherent risk in Australia due to landscape, climate and native plants being highly combustible[2]. Research from the Australian public and private sectors has pointed to changing physical risks from severe weather patterns including how climate change is impacting the severity and frequency of bushfires[3].

In 2019, ABR member IAG, in partnership with the National Centre for Atmospheric Research, released a scientific report, *Severe Weather in a Changing Climate*, which concludes that: "bushfire

[1] Bruyère, C., Holland, G., Prein, A., Done, J., Buckley, B., Chan, P., Leplastrier, M., Dyer, A. (2019). *Severe weather in a changing climate*. Insurance Australia Group (IAG). doi: http://dx.doi.org/10.5065/nx7j-0s96
[2] Geoscience Australia, "Bushfire." https://www.ga.gov.au/scientific-topics/community-safety/bushfire
[3] Bureau of Meteorology and CSIRO (2018). *State of the Climate 2018*; p. 2.

risk, as measured by the trends in fire danger indices, is likely to increase in almost all locations nationally, leading to more frequent and extreme events, and longer fire seasons"[4].

The 2017 ABR estimate of the total tangible and intangible economic costs of natural disasters was $18.2 billion per year and forecast to rise to $39 billion per year by 2050[5]. Including these intangible costs showed our previous analysis of the economic costs of disasters underestimated the true costs by at least 50 per cent[6].

For South Australia alone, that estimated cost is $200 million per year, with 57% of that cost due to bushfires. By 2050 the total economic cost is forecast to be $700 million per year[7].

The 2016 ABR commissioned report, *Economic Cost of the Social Impact of Natural Disasters* includes a case study of the 2009 Black Saturday bushfires, (pgs. 37-43) demonstrating the range of tangible and intangible costs relevant to this inquiry. Severe fires impact infrastructure, essential services and communities, with costs born on individuals, governments and businesses. As well as large upfront response and recovery costs, severe fires can dampen state economies over the medium term[8]. Furthermore, severe fires have long-term often intangible impacts on the wellbeing of communities and individuals[9].

ABR cost estimates do not include the likely additional costs as a result of climate change. If included this estimated $39 billion per year by 2050 figure would certainly rise.

For bushfires and other natural hazards, it is important for government, businesses and communities to refer to the latest climate science and develop a shared understanding of risks and opportunities for prevention, preparedness and response.

Need for a coordinated approach

The recent bushfire season as well as other disasters across Australia have generated a national discussion of how we may reduce our vulnerability to natural hazard threats. It also highlighted the need to develop a more sustainable and comprehensive national approach to the complex issue of managing weather-related risks.

The ABR believes that all Australians have a role in ensuring we are optimally prepared for severe natural hazards. More than nine million Australians were impacted by a natural disaster between 1987 and 2017[10]. All levels of government should collaborate with communities, businesses and the not-for-profit sector to improve Australia's preparedness, resilience, response and recovery to natural disasters. This is a national challenge that requires everyone to develop and deliver solutions[11].

Each Australian state and territory faces different natural hazards which impacts the total cost of disasters in each jurisdiction as well as which tools will best build and foster resilience[12].

It is important to acknowledge that natural disasters transcend the scope of state and territory jurisdictional responsibilities. Natural hazards often spill across state borders, requiring coordination and cooperation between states with different economic abilities and constraints. As such, it is efficient to provide a policy response centrally to ensure consistency and avoid duplicated effort across jurisdictions.

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[4] Bruyère, C., Holland, G., Prein, A., Done, J., Buckley, B., Chan, P., Leplastrier, M., Dyer, A. (2019). *Severe weather in a changing climate*. Insurance Australia Group (IAG). doi: http://dx.doi.org/10.5065/nx7j-0s96; p. 3.
[5] Australian Business Roundtable for Disaster Resilience & Safer Communities (ABR) commissioned report: *Building Resilience in Our States and Territories* (2017), p. 20.
[6] Australian Business Roundtable for Disaster Resilience & Safer Communities (ABR) commissioned report: *The Economic Cost of the Social Impact of Natural Disasters* (2016A), p. 13.
[7] ABR (2017), p. 83.
[8] ABR (2017), p. 12; 48.
[9] ABR (2016A), p. 38-43.
[10] ABR (2017), p. iii.
[11] ABR (2017), p. iii.
[12] ABR (2017), p. iii.

All levels of Government in Australia have a role in improving Australia's resilience. The Commonwealth Government has a key role as a leader, policymaker, legislator and funder to improve Australia's preparedness, resilience, response and recovery to natural disasters. The Government also has a critical role developing and sharing appropriate information, developing high-level awareness of risks and responding to market and regulatory failures that prevent effective and efficient natural disaster risk management[13]. A central policy response supports consistency and avoids duplication across jurisdictions.

However, with many of the levers to drive resilience in their hands, State governments, agencies and departments have key roles to play in prevention, preparation and recovery for bushfires. The ABR commissioned report *Building Resilience in Our States and Territories* (2017) is attached to this submission to inform government and private sector actions around natural hazard management and improving disaster resilience. Lessons can be learned from state initiatives (pgs. 58-94) around governance arrangements, funding for resilience, collaboration between the public and private sector and barriers to building resilience. The report details the key role of states and territories in building resilience (pgs. 48-57) through the following:

- infrastructure,
- land use planning,
- building controls,
- emergency management,
- data collection and provision and
- community awareness[14].

State collaboration with local government and the private sector

Local government and the private sector play an active role in reducing and managing disaster risks. When state and territory governments collaborate with other decision-makers it fosters a more holistic approach to resilience[15].

However, local governments may not have the resources to develop comprehensive mitigation programs required to secure state funding. In these cases, it is important for the relevant state government to lead in ensuring state-wide priorities are identified and addressed[16].

In addition, the private sector plays an important role in promoting resilience and community protection. Insuring the population against risk allows people to protect themselves from disasters. For instance, without insurance, disaster recovery costs to government would be far higher, pulling funds from other priorities, including resilience. Similarly, the private sector manages other essential infrastructure assets, such as telecommunications and electricity, which underpin response and recovery agility. By working with the private sector to embed resilience planning, states can holistically mitigate disaster risk and make communities safer[17].

Prevention

The ABR advocates for community resilience and mitigation against known risks as the first priority for reducing the impact of natural hazards. In this context, mitigation includes multiple policy options and is defined as measures taken before a disaster aimed at decreasing or eliminating its impact on society and the environment[18].

The ABR's commissioned report (2013) *Building Our Nation's Resilience to Natural Disasters* found that a simple cost-benefit analysis demonstrates how government funds would be saved over the longer term by placing a greater level of investment in pre-disaster resilience measures. The report

[13] Australian Business Roundtable for Disaster Resilience & Safer Communities (ABR) commissioned report: *Building Our Nation's Resilience to Natural Disasters* (2013), p. 53.
[14] ABR (2017), p. 48-57.
[15] ABR (2017), p. 62
[16] ABR (2017), p. 62.
[17] ABR (2017), p 62.
[18] COAG (2011). *National Strategy for Disaster Resilience*.

demonstrated that carefully targeted resilience investments of $250 million per annum have the potential to generate budget savings in the order of $12.2 billion for all levels of government. If successfully implemented, it could see Australian and state government expenditure on natural disaster response fall by more than 50% by 2050[19].

The second, or double benefit, of mitigation targeting resilience are 'co-benefits' that accrue even in the absence of a disaster. Such co-benefits support economic growth and social capital in Australian communities and are an important driver of regional investment decisions. They may include: short-term employment, regional growth associated with investment, lower insurance premiums, more connected communities, improved business and consumer confidence, more reliable services or higher levels of skills and technical expertise[20].

There are also the direct and indirect employment benefits and opportunities for innovation that arise from these local investments. Thus, this combination of avoided losses and co-benefits yields a 'double dividend' from resilience investment[21]. These are all benefits that are realised in the present[22].

The ABR supports disaster recovery efforts, acknowledging that funding is essential for communities to recover and rebuild post disaster. However, our research shows the clear economic and social benefits of also funding disaster mitigation and resilience before a disaster strikes.

The ABR's 2017 report found Australian and state government spending on direct recovery from disasters is around $2.75 billion per year. In contrast, funding resilience to natural hazards is only approximately $100 million per year[23].

Shifting the funding balance from recovery to mitigation involves smarter planning and investment. The process of prioritisation should consider an investment's potential to deliver co-benefits, including economic growth and community connectedness[24].

ABR Recommendation: Investment in mitigation is the first priority. All levels of government should commit to review funding on mitigation and look to fund a long-term program which significantly boosts investment in mitigation infrastructure and activity[25].

Reducing Bushfire Ignitions

This section responds to the terms of reference under prevention of reducing bushfire ignitions with a focus on electricity infrastructure and hazard reduction.

Flying embers are primarily responsible for the ignition of houses during bushfires. The state government needs to consider the most effective mix of policy and process measures that relate to residential, commercial and critical infrastructure exposure to flying embers[26]. We suggest the government consult with business, researchers and communities to explore this issue.

The 2013 ABR commissioned report, *Building Our Nation's Resilience to Natural Disasters*, provides a case study (pgs.47-50) that illustrates the benefit of undertaking pre-disaster resilience activities. The bushfire scenario in Melbourne goes through examples of vegetation management and reducing ignition sources, discussed below[27].

Electricity infrastructure

Faults in either electricity transmission or distribution networks are a frequent cause of bushfires. For example, the Victorian Bushfire Royal Commission found that five of the 15 fires it investigated were caused by electrical faults. Burying wires underground would remove electricity transmission and

[19] ABR (2013), p. 21.
[20] ABR (2017), p. 8.
[21] ABR (2017), p. 8.
[22] ABR (2017), p. 30.
[23] ABR (2017), p. 30.
[24] ABR (2017), p. 30-31.
[25] ABR (2017), p. 96.
[26] ABR (2013), p. 49.
[27] ABR (2013), p. 47-50.

distribution networks as a bushfire risk and is an example of an infrastructure-based response to developing resilience that has a benefit-cost ratio (BCR) of up to 3.1[28].

Resilient infrastructure plays a critical role in supporting communities to withstand, respond to and recover from disasters. Investment in resilient infrastructure can deliver cost savings and additional benefits not captured in the value of rebuilding costs[29].

ABR Recommendation: While different resilience measures show a wide range of benefit-cost ratios (BCRs), investments should target high-risk locations using appropriate combinations of infrastructure, policy and procedures that carry the highest BCRs[30].

Hazard reduction

ABR research suggests that improved vegetation management has a benefit-cost ratio of around 1.3[31]. While properties at serious risk from bushfires are normally located within 100m of a large area of bushland, research shows that about half of all properties destroyed by bushfires are within 15m of bushland. This implies that frequent management of vegetation within a property could generate significant benefits, not only for that property but for its neighbours[32].

Over time resilience measures may deteriorate (e.g. clearing vegetation around homes in bushfire risk areas) and so the property and surrounding environment must be appropriately maintained to ensure ongoing resilience. This is challenging as it requires sustained and consistent localised management[33].

ABR Recommendation: Governments at all levels should explore strategic alliances between local communities, organisations such as the South Australian Country Fire Service and local government as best placed to implement granular pre-disaster resilience options such as vegetation management and monitor compliance[34].

Community Preparation and Resilience

Physical resilience measures can significantly reduce disaster impacts, but they cannot stop them from happening. The remaining impacts, however, can be lessened by community measures[35]. South Australia contains many regional and small towns and their communities play a crucial role in resilience. Community measures for preparation and resilience include awareness activities that enable individuals, businesses and governments, including emergency services, to be better prepared when a disaster occurs, such as:

- Early warning systems,
- Community education sessions,
- Emergency and evacuation planning and kits and
- House and property maintenance[36].

These programs enhance social capital by building social networks and connections and enable communities to work together to better manage the risks they confront. This promotes communities that are better able to withstand and recover from a crisis[37].

Many of these measures are relatively inexpensive and are often sustained by volunteers. However, because their benefits are indirect, and accrue over time as behaviour is modified, they are difficult to

[28] ABR (2013), p. 50.
[29] ABR (2013), p. 10.
[30] ABR (2013), p. 11.
[31] ABR (2013), p. 50.
[32] Risk Frontiers, 2010, in ABR (2013), p. 49
[33] ABR (2013), p. 16.
[34] ABR (2013), p. 49.
[35] ABR (2017), p. 41.
[36] ABR (2017), p. 41.
[37] ABR (2017), p. 96.

measure, their significant net benefits are broadly acknowledged as is their role as an important complement to physical measures[38].

Community measures are particularly beneficial in high risk areas or in areas with transient or growing populations, where new residents may not be familiar with appropriate responses to natural disasters[39].

ABR research (2017) profiled South Australia's Community Fire Safe program as a positive example of a bushfire resilience program which engage the private and community sectors. Coordinated by the South Australia Country Fire Service, it encourages residents in high-risk areas to form small groups and work together to prepare and protect their families and properties from bushfires. Some preparation includes:

- Making plans with more vulnerable community members,
- Establishing telephone trees to communicate during bushfires
- Organising neighbourhood working bees to prepare properties and
- Buying fire equipment in bulk, including protective clothing[40].

It has been suggested that this community resilience program has a net benefit of about $107 million to South Australia[41].

While these preventative measures require up-front funding, they yield a return on investment by lessening the overall impact of a disaster on individuals, businesses, governments and communities.

These programs should be designed in consultation with communities to ensure a tailored approach to the specific community's challenges.

ABR Recommendation: Governments at all levels, businesses and communities need to further invest in community resilience programs that drive learning, understanding of disaster risks and sustained behaviour change[42].

Preparation

State Development and Control Planning

Mitigating disaster risk should be a priority for both new and existing infrastructure assets.

Land use planning is arguably state governments' strongest tool to mitigate natural hazard risk, including bushfire risk. Planning frameworks can identify land with vulnerabilities and ensure these risks are considered in decisions. Consideration may then be given to development conditions, engineering requirements, the exclusion of certain activities and no-build zones in high-risk areas. Such decisions have a big impact on where communities live and work and, thus, how exposed they are to future disasters[43].

Of particular concern is the ongoing use and development of land in areas that are repeatedly affected by natural hazard events[44]. After development has begun, land use rights cannot be changed, even if new knowledge becomes available, such as advances in climate science.

Greater attention should be directed towards specifying risk tolerance, how data will underpin planning outcomes, which modelling or mapping techniques should be used and how these relate to zoning classifications. A threshold for risk tolerance is needed for risk-based decision making. This should be consistent across the community and drive cost-benefit analysis of mitigation infrastructure as well as land use planning. A consistent framework for data collection and provision of regionally

[38] ABR (2017), p. 41.
[39] ABR (2017), p. 41.
[40] ABR (2017), p. 43.
[41] ABR (2017), p. 43.
[42] ABR (2016A), p. 62.
[43] ABR (2017), p. 52.
[44] ABR (2013), p. 32.

and locally relevant and accurate information is essential for land use planning and development decisions which promote effective pre-disaster resilience[45].

Moreover, a major share of the costs associated with disasters arises from damage to critical infrastructure including roads, bridges, telecommunications, power and water supply, railways and hospitals. Repairing, rebuilding or replacing these assets after a disaster is often a costly exercise which also can exacerbate the suffering of the community during the recovery process.

More than $450 million per year has been spent by Australian governments on restoring essential public assets following extreme weather events between 2002-03 and 2010-11, or 1.6 per cent of total public infrastructure spending[46]. Thus, roads, bridges and other critical infrastructure should be built or repaired to withstand natural disaster risks[47].

Planning reform and enhanced building codes are an important element of reducing risk, yet they only affect new and renovated homes. The greatest impact of resilience measures but arguably the biggest coordination challenge, lies with existing residential buildings (retrofit, compliance and relocation). It is often more technically difficult and costly to retrofit an existing property to be disaster resilient[48].

Further information, including guidance for practitioners and specific principles for infrastructure planning can be found in *Building Resilient Infrastructure* (2016).

ABR Recommendation: Natural disaster risks should be considered for new land releases, infrastructure and developments in growing population centres; recognised risks should be mitigated early in planning phases and critical infrastructure should be built or repaired to withstand natural disaster risks[49].

ABR Recommendation: Public and private sectors should work together to support community education around retrofitting and to modernise building codes to include minimum standards for the durability of property to natural hazards.

Recovery

The ABR supports disaster recovery efforts, acknowledging that funding is essential for communities to recover and rebuild post disaster.

Recovery is a partnership across sectors. Individuals, businesses, governments and communities all feel the social and economic impacts of disasters. These impacts are complex and touch all levels of government and cross all portfolios, from infrastructure and planning to health and education[50].

It is essential that both physical infrastructure and communities are rebuilt stronger and better able to mitigate against the impacts of future disasters.

When infrastructure is rebuilt following a disaster, applying betterment principles, such as the Queensland Reconstruction Authority's Framework for Betterment (2015), can help to restore assets to an even higher standard of resilience than prescribed by engineering standards[51].

While it is important to invest in recovering physical infrastructure, there is also a need to consider community and social infrastructure and psychosocial support when making decisions about post-disaster funding[52].

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[45] ABR (2013), p. 32.
[46] ABR (2016), p. 2.
[47] ABR (2017), p. iv.
[48] Australian Business Roundtable for Disaster Resilience & Safer Communities (ABR) commissioned report: *Building Resilient Infrastructure* (2016B), p. 16.
[49] ABR (2017), p. iv.
[50] ABR (2016A) p. 14.
[51] ABR (2016B), p. 36.
[52] ABR (2016A), p. 49.

Pre- and post-disaster funding directed towards social and psychological preparedness has potential to mitigate impacts of disasters. This includes community development programs and support for areas such as health and wellbeing, employment and education[53].

ABR Recommendation: For more effective recovery, governments, businesses and communities should commit to rebuild infrastructure and communities stronger and better able to mitigate against the impacts of future hazards[54].

Conclusion

The ABR's commissioned research reports outline a cohesive approach for effective and prioritised pre-disaster investments across the country and highlight the importance of integrated information and activity across government, business and community.

Enclosed for the Government's consideration are the following ABR commissioned materials as referenced throughout this submission:

- Australian Business Roundtable for Disaster Resilience & Safer Communities commissioned report: *Building Resilience to Natural Disasters in Our States and Territories* (2017).
- *Building Resilience to Natural Disasters in Our States and Territories, South Australia fact sheet* (2017).
- Australian Business Roundtable for Disaster Resilience & Safer Communities commissioned report: *The Economic Cost of the Social Impact of Natural Disasters* (2016).
- Australian Business Roundtable for Disaster Resilience & Safer Communities commissioned report: *Building Resilient Infrastructure* (2016).
- Australian Business Roundtable for Disaster Resilience & Safer Communities commissioned report: *Building Our Nation's Resilience to Natural Disasters* (2013).

By pursuing key recommendations of the ABR reports, economic costs can be materially reduced, as well as relieving long-term pressures on government budgets. More importantly, a safer Australia can be created through building resilience against the trauma and loss of life that all too frequently confronts many of our communities when extreme weather hits.

Should you require further information please do not hesitate to contact Shauna Coffey, Manager, Australian Business Roundtable for Disaster Resilience & Safer Communities on (02) 9292 3888 or shauna.coffey@iag.com.au.

Yours sincerely,

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On behalf of the Australian Business Roundtable for Disaster Resilience & Safer Communities

[53] ABR (2016A), p. 65.
[54] ABR (2016A), p. 14; 61. ABR (2016B), p. 36.