
Reducing Bushfire Risks

Tabled 14 October 2020



Introduction

Victoria is one of the most bushfire-prone areas in the world. The state's extreme weather events are becoming more frequent and intense, which is leading to more severe bushfires that burn more land.

The recent 2019–20 bushfire season had a devastating impact on human life, wildlife, flora and infrastructure, and adversely affected Victoria's economy.

While it is not possible to eliminate the threat of bushfires, government plays a key role in reducing the risks they pose to people, property and the environment.

This audit looked at whether responsible agencies are working together effectively to reduce Victoria's bushfire risk.

Conclusion

The audited agencies, particularly the Department of Environment, Land, Water and Planning (DELWP) and the Country Fire Authority (CFA), are collaborating to reduce the risks that bushfires pose to life, property and the environment.

However, there is insufficient information available to understand the effectiveness and impacts of agencies' risk-reduction activities.

Current modelling limitations and lack of reporting on non-burn and private land-based risk reduction activities:

- inhibits continuous improvement
- limits community understanding of performance in reducing risk and
- constrains DELWP and government's ability to make better informed investment decisions to further reduce risk.

Reducing risk across the state also requires a stronger focus on, and allocation of resources to, treating private land, to complement that applied to public land.

What and who we looked at

We examined DELWP, Parks Victoria, CFA, Emergency Management Victoria, and Energy Safe Victoria (ESV). We also looked at three local councils—the City of Whittlesea, and East Gippsland and Murrindindi Shire Councils.

What and who we looked at



1.

Fuel management, including DELWP's performance target for reducing bushfire risk and its risk-reduction strategies



2.

Victoria's land-use planning system



3.

The Powerline Bushfire Safety Program (PBSP)

We looked at three key areas of risk reduction:

- fuel management, including DELWP's performance target for reducing bushfire risk and its risk-reduction strategies
- Victoria's land-use planning system, and
- the Powerline Bushfire Safety Program (or PBSP).

We did not examine frontline bushfire response or emergency management.

Fuel management

This part focuses on fuel management, our findings about DELWP's performance target for reducing bushfire risk and its risk reduction strategies.

Fuel management is a major part of DELWP's bushfire risk management strategy. It reduces the intensity of fires and makes them easier for firefighters to control. Fuel management treatments include planned burning and non-burn treatments, such as grass slashing, ploughing and using herbicides.

Following the Black Saturday bushfires in 2009, DELWP adopted a hectare-based target for its planned burn program.

In 2015, the Inspector-General for Emergency Management recommended replacing this target with a risk-reduction target. While the hectare-based target focused on annually burning a minimum number of hectares, the risk-reduction target prioritises burns in areas that will reduce the most risk.

Issue 1: DELWP's advice to government about the risk target was incomplete

DELWP used the modelling tool Phoenix RapidFire to inform its advice to government about the selection of residual risk-reduction target. It did this by modelling seven different planned burn scenarios.

While some of the scenarios maximised the number of hectares treated, others prioritised risk reduction, which DELWP measured by the number of houses that planned burning would save during a simulated bushfire. Scenarios that prioritised risk reduction outperformed those that prioritised hectares burned.

DELWP advised the government that it could reduce Victoria's bushfire risk by 30 per cent with \$50 million of annual funding, which was how much it received for planned burning at the time. However, DELWP did not communicate that its modelling showed it could achieve greater risk reduction with further investment. It also did not explain Phoenix RapidFire's limitations.

2.

Fuel management



Issue 2: The combined impact of planned burning and non-burn treatments is not measured

The government's Safer Together policy, which it established to implement the Inspector-General's 2015 recommendations, commits to holistically measuring the impact of planned burning and non-burn risk treatments by the end of 2020.

DELWP and its partner agencies are not on track to meet this commitment because they do not measure the impact of non-burn treatments. DELWP advised us that it will develop the capability to do this by late 2021.

Issue 3: DELWP's performance reporting does not clearly show the impact of its efforts

Victoria's current residual risk level meets the government's target to reduce the state's residual risk level to 70 per cent or less.

DELWP's reporting against its performance target, set in Budget Paper 3, does not give government agencies, the government or the public a complete understanding of the impact of its risk-reduction activities.

This is because:

- DELWP's non-burn treatments are excluded from this reporting, and
- the reported result reflects the combined impact of DELWP's planned burn activities together with fuel reduction caused by bushfires, which is not attributable to DELWP.

During this audit DELWP developed a method to separate the effects of its planned burn program from bushfires and intends to start reporting this separately in future reports.

DELWP also does not clearly report on how its planned burn program impacts native flora and fauna and neither DELWP nor the CFA assess and consider the cost-effectiveness of their risk reduction activities.

Issue 4: Risk assessment and treatment on private land needs a stronger focus

While DELWP is responsible for assessing and reducing bushfire risk on public land, CFA and councils do so for private land, which makes up 60 per cent of Victoria. Private land usually poses a lower bushfire risk because it is often cleared for crops, grazing or building development.

Despite this, it is difficult for the CFA and councils to assess and address bushfire risk on private land due to staff capacity and capability limitations, and their lack of data and access to modelling tools.

In addition, there is a lack of focus on risks present on private land in DELWP and the CFA's operational planning, which creates a gap in understanding risk across the state.

3.

Land-use planning



Recommendations

We made 14 recommendations to DELWP and the CFA on fuel management:

- 2 to improve risk modelling and (measuring and reporting performance)
- 5 on taking more holistic, complete and consistent approaches to planning to address risk
- 5 on better documenting and collecting data associated with risk treatments and evaluating impacts
- and 2 to support improved risk assessment on private land.

Land-use planning

Victoria's bushfire history shows a strong link between property loss and loss of life. For this reason, planning and building controls play a key role in reducing bushfire risk by controlling where people can live and the construction standards they must build to.

In 2017, the government changed the Victoria Planning Provisions to improve strategies for planners to identify, assess and manage bushfire hazards.

These changes prioritise protecting human life by:

- directing population growth and development to low-risk locations
- ensuring people have safe access to areas where they can shelter from bushfires, and
- considering bushfire risks during all stages of the planning process.

DELWP mapped Victoria's high-bushfire-risk areas into two categories—bushfire prone areas (or BPAs), which cover most of regional Victoria, and bushfire management overlays (or BMOs), which cover the highest risk areas.

In BPAs, a minimum construction standard applies to all new building work, including work on existing buildings.

In BMOs, developments and extensions require a planning permit in addition to a building permit and are subject to further planning controls, such as the required construction standard and defensible space, which is land that needs to be maintained to provide a break between a building and vegetation.

Issue 1: Consistent statewide approach

DELWP's statewide mapping of BPAs and BMOs gives councils a consistent way to assess bushfire risk and inform land-use planning decisions.

Issue 3: Limited council reviews of compliance



Never meet the BMO conditions



Do not maintain BMO standards



Unaware of BMO conditions when buying a property

Issue 2: Bushfire risk to existing properties not addressed

However, properties that predate contemporary planning and building standards do not benefit from the updated controls.

This is because BMO and BPA requirements only apply to new developments or extensions to existing properties.

Issue 3: Limited council reviews of compliance

Not all audited councils routinely check that landowners continue to meet their planning permit conditions. This creates a risk that landowners:

- never meet the BMO conditions set by their permit
- do not maintain BMO standards for the life of their property, or
- may not be aware of BMO conditions when buying a property.

Issue 4: The impact of planning controls on bushfire risk is not measured

DELWP does not monitor, evaluate or report on how effective planning and building controls are at reducing bushfire risks. As a result, it is unclear how changes to Victoria's planning provisions have impacted the state's bushfire risk level.

Recommendations

We made one recommendation to DELWP about improving awareness of planning controls among property owners and occupiers.

PBSP

Powerline faults have started many of Victoria's major bushfires. The PBSP is a 750 million dollar 10-year program designed to reduce this risk.

We focused on two of the largest PBSP projects—the 500 million dollar Network Assets Project (or NAP) and the 200 million dollar Powerline Replacement Fund (or PRF).

On Black Saturday, powerline controls did not operate fast enough to prevent faults from starting some fires. Under the NAP, electricity distribution businesses are installing two types of protection devices in high-bushfire-risk areas—rapid earth fault current limiters (or REFCLs) and automatic circuit reclosers (or ACRs).

4.

The Powerline Bushfire Safety program (PBSP)



REFCLs operate like a safety switch. When a powerline connects with the ground, they lower the voltage on the faulty line almost instantaneously.

ACRs reduce the risk of fires starting by limiting the number of times a powerline attempts to re-establish connection after a fault.

Under the NAP, electricity distribution businesses are replacing manually operated ACRs with new generation ACRs that can be controlled remotely.

The PRF is a government-funded project to cover, insulate, bury or remove high-voltage bare-wire powerlines in 11 of Victoria's 33 highest bushfire risk areas. It has also funded individuals who own private poles and low voltage powerlines to bury them underground.

Issue 1: Selecting technology and areas for treatment

Victoria's decision to use REFCLs to reduce bushfire risk is a world first. We found that DELWP selected technology for the NAP based on comprehensive research and trials conducted by external experts.

DELWP also targeted treatments to areas where powerlines were more likely to start bushfires with severe consequences. It prioritised these highest risk areas to achieve the greatest benefit with the available funding.

Issue 2: Program costs and delivery challenges

The PRF was completed in March 2020—ahead of its January 2021 deadline and at a cost of 188 million dollars. The NAP is still ongoing. Electricity distribution businesses are making good progress against the government's legislative time frames to install REFCLs to 45 zone substations.

However, high-voltage customers, who are commercial or government electricity users, are expected to cause some delays. This is because some of these customers have not completed the necessary upgrades to make their equipment REFCL ready.

The NAP's final costs are estimated to be 747 million dollars, which is almost 250 million dollars above the original estimate. This is mostly due to challenges that distribution businesses have experienced while installing the new technology.

Victorian electricity consumers of participating distribution businesses are covering the costs of the NAP through their electricity bills.

Issue 1: Selecting technology and areas for treatment



Issue 3: Addressing the remaining risk

When the NAP is completed in April 2023, REFCL technology is expected to reduce the risk of powerlines starting bushfires across the state by 33.7 per cent, compared to modelled risk levels without this intervention.

The PRF has reduced the risk of powerlines starting bushfires by 98 to 99 per cent on treated powerlines.

On completion of the NAP, all high-voltage powerlines in the 33 highest risk areas will also benefit from REFCL protection, reducing the risk level by 58.6 per cent in these areas.

Due to limited funding, DELWP was only able to insulate or bury 41 per cent of the high-voltage bare-wire powerlines in 11 of the 33 highest bushfire risk areas.

Legislation requires electricity distribution businesses to bury remaining bare-wire powerlines in all of these areas at the end of their life. Based on their current replacement rate, DELWP and Energy Safe Victoria estimate that this will take approximately 30 to 50 years to complete, which they consider too slow to reduce the remaining risk.

Issue 4: Monitoring, evaluating and reporting outcomes

REFCLs were operating at 19 zone substations on 17 total fire ban days during the 2019–20 bushfire season. Across these days, REFCLs were activated 49 times by electrical faults. 24 of these faults would have likely started a bushfire. Despite these faults, no fires started on REFCL-protected networks. The REFCLs potentially prevented ignitions at a time when Victoria was enduring catastrophic bushfire activity.

While DELWP has comprehensive internal reporting, its public reporting on the program's cost, activities and outcomes has been limited. During our audit in August 2020, DELWP released its first public report covering 2012–19.

Recommendations

We made 2 recommendations to DELWP on the PBSP:

- 1 on improving the PBSP's transparency by publicly reporting on activities, costs and outcomes
- 1 on addressing the remaining risk of bare-wire powerlines.