



Standard for Smoke, Air Quality and Community Health –

Significant fires with fine particles ($PM_{2.5}$) as the primary
smoke component of health concern

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VERSION 4.0

Working in conjunction
with Communities,
Government, Agencies
and Business.

The *Standard for Smoke, Air Quality and Community Health – Significant fires with fine particles as the primary smoke component of health concern* is authorised and endorsed by the following:

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Section 1 - Introduction

Overview

This *Standard for Smoke, Air Quality and Community Health – Significant¹ fires with fine particles (PM_{2.5})² as the primary smoke component of health concern* (the Standard) outlines the approach for responding to the impacts of significant smoke events on public health in Victoria.

This Standard reflects the cooperation between agencies during a significant smoke event.

The approach in this Standard is consistent with the national [enHealth Guidance for public health agencies – Managing prolonged smoke events from landscape fires](#) ('the enHealth Guidance'), published in December 2021 and endorsed by the Australian Health Protection Principal Committee (AHPPC). The [enHealth Guidance](#) recommends health protection measures for landscape fires that have community smoke impacts lasting for a prolonged period, typically more than two to three days.

Nationally agreed 1-hour and 24-hour (forecast) air quality categories and associated public health advice for PM_{2.5} were endorsed by the AHPPC in December 2020 and have since been used by Environment Protection Authority Victoria (EPA), and remain in this Standard.

The key changes in this Standard are:

- the removal of public health advice associated with measured 24-hour air quality categories of PM_{2.5}
- the removal of a recommendation for temporary relocation for sensitive groups when PM_{2.5} levels were predicted to reach 250 µg/m³ for 3 days
- referral to the [enHealth Guidance](#) for public health advice and messaging for prolonged smoke events

This revised and updated Standard is relevant for significant smoke events in Victoria with the potential for community health impacts from fires in vegetation (bushfires), brown coal and peat bogs for PM_{2.5}. It also includes smoke from planned burning by fire agencies, and/or private and agricultural burn-offs, as well as smoke from fires that may originate from interstate.

¹ Significant fires – are fires that are complex, or large-scale, or prolonged, or produce large amounts of smoke or emissions, or a combination of any of these factors, and that may affect community health. In this Standard, 'prolonged' means typically more than two to three days.

² The air quality measure for assessing the potential health risks of community exposure to smoke is PM_{2.5} fine particles – which have an aerodynamic diameter of less than 2.5 µm (one 30th the size of a human hair). The monitoring and estimation of PM_{2.5} fine particle concentrations in air informs the recommended level of cautionary advice and actions for people to follow to protect their health until air quality improves.

Purpose

The objectives of this Standard are to:

- Adopt the national [enHealth Guidance](#) for prolonged smoke events.
- Include the nationally consistent air quality categories and public health advice for 1-hour PM_{2.5} averages (Appendix 1) and 24-hour forecast categories (Appendix 2) and public health advice.
- Ensure communities receive the best available information on what to do to minimise smoke exposure to protect their health during significant smoke events, especially sensitive groups. Sensitive groups include those over 65 years, infants and young children, pregnant women and people with existing chronic diseases including: heart or lung conditions such as asthma, and diabetes.
- Support decision-making of agencies, Incident Controllers and Agency Commanders in responding to smoke events, to minimise the impacts of smoke exposure on community health as much as possible.

The Standard is:

- not a step-by-step guide, however the content is operationalised in separate cross-government joint standard operating procedures, including SOP J03.18 and SOP J03.19.
- not designed for workplace-related exposures to extended smoke events for firefighters and other emergency personnel.

Most hazardous material fires have additional smoke components or emissions of health concern other than fine particles and are therefore complex fires with unique risks to responder and community health and safety. The [Protective Action Guide for Hazardous Outdoor Atmospheres](#) and the hierarchy for selecting community exposure standards applies to hazardous outdoor emergencies where ‘shelter indoors’ is a first line option for protecting community health and safety during short-term (one hour to 24 hours up to a few days) hazardous materials fires.

The 2019-20 Australian summer bushfire experience

Australia’s 2019-20 bushfires showed that using thresholds for relocation or advice to take a break away from the smoke was not practical and did not account for fluctuating smoke levels over time. It is important to minimise exposure to smoke. Actions to reduce exposure to smoke should be taken regardless of an air quality category threshold for PM_{2.5} being reached. This Standard therefore no longer contains a ‘temporary relocation’ threshold for sensitive groups. This approach aligns with the approach in the national enHealth Guidance.

Strategic Intent

Under Victoria’s emergency management arrangements, the Control Agency for fire response is one of: Fire Rescue Victoria (FRV); Country Fire Authority (CFA); or the Department of Environment, Land Water and Planning (DELWP).

The Emergency Management Commissioner has an overarching management role during major emergencies to ensure that response is systematic and coordinated for both Class 1 (major fire) and Class 2 (all other except major fire and terrorism or hijack-related) emergencies.

State Emergency Management Priorities guide all decisions made during emergencies. The following priorities are relevant to fires resulting in extended smoke events:

- the protection and preservation of life is paramount. This includes the safety of emergency services personnel and safety of community members, including vulnerable community members and visitors/tourists located within the incident area.
- issuing community information and community warnings detailing incident information that is timely, relevant and tailored to assist community members make informed decisions about their safety.

The EPA is a technical support agency in Victoria's emergency management arrangements. Technical advice is provided before, during and after emergencies to the Control Agency and to relevant support agencies, government, industry and the community through scientific, engineering and regulatory expertise on the environmental and public health impacts of pollution and waste.

During emergencies, EPA response activities include:

- The provision of advice to the Control agency on risks to the environment and human health, and the practical measures to reduce environmental and public health impacts of pollution and waste.
- In cooperation with the Control agency, provision of advice to the community on the harmful effects of pollution and waste and recommended actions to protect human health.
- Supporting the Chief Health Officer with expert advice on the risks of pollution and waste to human health as required.

During emergencies involving significant pollution consequences, the Chief Environmental Scientist supports the Emergency Management Commissioner, State Controller and Chief Health Officer with expert advice on the risks to the environment and human health, and practical measures to protect the environment and public health from impacts of pollution and waste³.

For prolonged events, stronger health protection measures may be collectively recommended especially for particular settings (eg aged care services, schools and child care centres), by the Chief Health Officer, Chief Environmental Scientist, State Response Controller, State Emergency Relief Co-ordinator and other relevant roles. Every fire will be different and whilst it may be predictable when some fires will last for a few weeks or more (as with coal or peat fires), this may not be the case for other fires. Considerations include whether smoke impacts are likely to be present for an extended period, assessment of fire status, forecasts, population exposed, risks to public health, and other contextual factors or intelligence relevant to the incident.

It is important that agencies work together during smoke events and also prepare communities. This is especially important for settings with people in sensitive groups such as aged care facilities,

³ Environment Protection Authority Victoria Role Statement ([SEMP Roles and Responsibilities](#))

schools, and child-care centres, who should have or be working towards, having plans in place to prevent or minimise exposure to smoke – for example, the creation of ‘clean-air spaces’.

Governance and Authorising Framework

The Standard is authorised in accordance with the statutory responsibilities of the:

- Emergency Management Commissioner and Emergency Management Victoria (EMV) with respect to responder and community safety under the [Emergency Management Act 2013](#)
- Heads of Victorian fire agencies in relation to Control responsibilities in fire response
- Chief Executive Officer, EPA with respect to the statutory objective of the [Environment Protection Act 2017](#) to protect human health and the environment by reducing the harmful effects of pollution and waste
- Chief Health Officer with respect to the protection of public health in accordance with the [Public Health and Wellbeing Act 2008](#).

The following legislation, other arrangements and documents inform this Standard:

- [Emergency Management Act 1986](#); [Emergency Management Act 2013](#)
- [Victorian State Emergency Management Plan](#) (October 2021) and role statements for: Emergency Management Commissioner and EMV; DH; EPA; FRV and CFA
- [State Health Emergency Response Plan](#) (2017)
- [State Smoke Framework 2016](#)
- enHealth Guidance for public health agencies [Managing prolonged smoke events from landscape fires](#)
- [JSOP3.18 - Incident Air Monitoring for Community Health](#) (September 2021)
- [JSOP3.19 - Managing Significant Community Exposure to Fine Particles and Carbon Monoxide in Smoke from Fires](#) (December 2020)
- [JSOP J04.01 Public Information and Warnings](#) (October 2020)

Section 2 – Smoke exposure and health

Fine particles, smoke exposure and health

Smoke from fires is a mixture of particles, also known as particulate matter, water vapour and gases, including carbon monoxide, carbon dioxide, hydrocarbons and other organic chemicals, nitrogen oxides, and other compounds depending on the type of fire.

Particulate matter (PM) in smoke can range in size from large, visible debris down to very small, invisible particles. It is the size of PM that determines how deep the particle can travel into the lungs when inhaled.

PM bigger than 10 micrometres in diameter generally only go as far as the nose and throat before being removed by the body. This particle size irritates the eyes, nose and throat and irritant effects usually resolve once smoke exposure ceases.

PM smaller than 10 micrometres in diameter or PM₁₀ inhalable particles may settle in the bronchi and lungs when breathed in. PM less than 2.5 micrometres in diameter or PM_{2.5} respirable fine particles can penetrate deep into the lungs (ie. into the gas exchange regions – alveolus).

The likelihood of health effects occurring from exposure to PM₁₀ particles, or PM_{2.5} fine particles depends on: the concentration in air (which is affected by meteorological conditions); duration of exposure; the person's age; the level of activity (rest, running, heavy exertion); whether a person has existing medical conditions (particularly cardio-respiratory disease or asthma, diabetes); and other individual susceptibilities.

The following groups are most sensitive to exposure to PM_{2.5} during smoke events:

- people with existing chronic diseases, including: heart or lung conditions such as asthma, and diabetes
- people over 65 years of age
- pregnant women
- infants and young children.

It is important that people with heart or lung conditions, including asthma maintain the treatment plan advised by their doctor. For example, making sure asthma is well-managed before a smoke event is something that can reduce the impacts of smoke exposure on individuals' health.

Anyone with diabetes should pay closer attention to their blood glucose levels. The [National Diabetes Services Scheme](#) provides comprehensive information about managing diabetes in an emergency and preparing a diabetes management plan.

PM_{2.5} are 'non-threshold' pollutants, which means no threshold has been identified below which no damage to health is observed.⁴ PM_{2.5} can have health impacts even at very low concentrations and therefore the aim is to minimise exposure to smoke even if it is for short periods. The higher the level of population exposure, the greater likelihood of sensitive groups

⁴ [https://www.who.int/news-room/fact-sheets/detail/ambient-\(outdoor\)-air-quality-and-health](https://www.who.int/news-room/fact-sheets/detail/ambient-(outdoor)-air-quality-and-health) (accessed 5 April 2022)

experiencing health effects. When exposure levels are very high, health effects may occur in everyone.

The national [enHealth Guidance](#) highlights that despite the known health effects from exposure to PM_{2.5} during smoke events, the risk of severe acute or chronic health effects for most people is low. People in higher risk groups, especially those with lung conditions such as asthma, bronchitis or emphysema are more sensitive to smoke and may experience symptoms at relatively small increases in levels of smoke. However, just because an individual has one of these conditions does not mean they will experience adverse clinical outcomes, but they are more likely to than those without these conditions.

Health protection measures on a day-to-day basis are important to reduce overall exposure during an event as health risks can add up over time. It is worth reducing exposure whenever possible. People who are not in higher risk groups generally tolerate intermittent high levels of smoke.

More information on the health effects of smoke from landscape fires and impacts on public health is available in the national [enHealth Guidance](#), in addition to the enHealth document [Bushfire smoke and health: Summary of the current evidence 2020](#) (both on the Commonwealth Department of Health's website).

EPA AirWatch

The EPA [AirWatch](#) webpage provides real-time (ie continuous) hourly reporting of common air pollutants including PM₁₀ and PM_{2.5}. Although PM₁₀⁵ particles and PM_{2.5} fine particles can be inhaled and affect health to different degrees, PM_{2.5} is the preferred air quality indicator for air monitoring and assessment of the potential health impacts of community exposure to smoke.

The air quality category at each EPA monitoring station is based on the highest hourly measurement for a common air pollutant. Hourly values inform general health messaging for air quality over the five air quality categories: which are Good, Fair, Poor, Very Poor and Extremely Poor. The associated health protection advice and recommended actions are in *Appendix 1*. Health protection advice and recommended actions for forecasted 24-hour PM_{2.5} air quality categories are in *Appendix 2*.

⁵ The US EPA recommends that when PM₁₀ measurements are only available during smoky conditions, it can be assumed that the PM₁₀ is composed primarily of fine particles (PM_{2.5}), and therefore the air quality categories and associated cautionary statements and advisories for PM_{2.5} may be used.

Section 3 – Risk management decisions

Tactical decisions during fires require sufficient time to communicate and implement on a whole-of-population basis. During fires that threaten life, property and community safety such as bushfires, the Incident Controller also makes informed, balanced judgements in tactical decision-making about smoke.

Tactical options for protecting community health from fine particles during smoke events include:

- Informing the community of the level of impact on air quality and the potential health risks associated with exposure to fine particles
- Ongoing provision of advice and cautionary actions people can take (including sensitive groups) to protect their health and the health of those in their care, for example:
 - airing out the home when outside air quality has improved
 - use of portable indoor air cleaners that have a high efficiency particulate air (HEPA) filter
 - use of face masks (P2 or N95)⁶
 - spending time in public buildings with air conditioning (eg libraries & shopping centres) or taking breaks away from the smoke affected area
 - creating ‘clean air rooms’
 - adapting physical activity
- Advice for specific settings, for example aged care facilities, schools or early childhood centres, and rescheduling outdoor events in smoke affected areas (stronger health protection measures that may be collectively recommended by the relevant agencies)
- Balancing the need for sensitive groups to leave the smoke-affected area against the potential risks associated with moving highly vulnerable people (eg high-level aged care residents).

Concept of operations

In Victoria, the following Joint Standard Operating Procedures operationalise the intent of this Standard:

- [SOP J03.18 - Incident Air Monitoring for Community Health](#) (September 2021)
- [SOP J03.19 - Managing Significant Community Exposures to Fine Particles and Carbon Monoxide in Smoke from Fires](#) (April 2022)

Joint Standard Operating Procedures apply to any event that generates significant or prolonged smoke where PM_{2.5} fine particles are the primary health hazard and detail the arrangements between relevant agencies for providing air-quality monitoring and the process for communicating health protection messages to smoke impacted communities.

⁶ P2 or N95 face masks can reduce exposure to fine particles in smoke but it's important to ensure they are fitted correctly to cover the mouth and nose. Advice should be followed about how to use them properly and who should be especially careful about their use; people with a pre-existing heart or lung condition should consider seeking medical advice before using one.

Incident air quality monitoring for PM_{2.5}

In addition to hourly air monitoring on EPA AirWatch from the standard monitoring sites, an Incident Controller (or Agency Commander) may request that EPA deploy Incident Air Monitoring equipment to assess the impacts of smoke on air quality to understand the level of potential community health effects⁷.

Air monitoring requires interpretation and scientific advice to determine the impacts on current air quality and to also forecast air quality over the next day or days. Trends and predictions in atmospheric fine particle concentrations over time are also important for decision making.

The concentration of fine particles in smoke fluctuates continuously with frequent spikes depending on local conditions such as wind speed and direction. This occurs during vegetation fires such as planned fuel reduction burns (ie short-term smoke events) or bushfires (ie short-term to long-term events).

Information issued to the community is based on both measured air quality data and forecast weather and fire data, which includes:

- measured results
- forecast models
- fire behaviour – both actual and forecast
- the predicted duration of prevailing conditions and elevated PM_{2.5} levels
- the size of the affected community
- the proximity of the community to the fire.

Average values (rolling 24-hour averages) are considered against the air quality categories (Good, Fair, Poor, Very Poor, Extremely Poor) with an understanding of the likely duration of the fire, the fire suppression strategy and predictions of weather conditions.

Air monitoring (from standard EPA monitoring sites and EPA incident monitoring) informs the air quality category and corresponding level of cautionary health protection advice and actions for people to follow to minimise impacts on their health – refer to *Appendix 2*. AirWatch displays health messaging for hourly PM_{2.5} levels.

⁷ JSOP3.18 – Incident air monitoring for community health (September 2021)

Section 4 – Community information

Community advice about smoke and health

Members of the community must remain vigilant during any emergency to receive and act on emergency warnings, advice and information in a timely way.

EPA Victoria provides information on general health protection advice for smoke events on their website.

- <https://www.epa.vic.gov.au/for-community/environmental-information/air-quality/smoke>

EPA's AirWatch provides close to real-time (continuous)⁸ air monitoring and health messages for the air quality categories: Good, Fair, Poor, Very Poor, and Extremely Poor. These messages are nationally consistent.

- <https://www.epa.vic.gov.au/for-community/airwatch>

The community should be advised to check EPA's AirWatch for changes to air quality throughout the day and follow the advice provided.

VicEmergency has cautionary advice and recommendations for actions to protect health during smoke events and is informed by EPA Victoria

- www.emergency.vic.gov.au/respond/

Better Health Channel also provides community information about smoke and health which is informed by EPA Victoria

- www.betterhealth.vic.gov.au/

For general public health advice for the community during prolonged smoke events, refer to section 4 of the [enHealth Guidance for Managing prolonged smoke events from landscape fires](#)⁹.

If air quality monitoring isn't available, a self-assessment of air quality based on visibility, and recommended actions to protect health for both sensitive groups and everyone, can be made using this [guide](#) from EPA Victoria's website.

For additional messages for prolonged events, refer to the [enHealth Guidance](#).

⁸ **Note:** EPA AirWatch shows one-hour averages for the respective air pollutants and are updated in real time.

⁹ <https://www1.health.gov.au/internet/main/publishing.nsf/Content/health-pubhlth-publicat-enviro.htm>

Appendix 1– Health messages for PM_{2.5} 1-hour averages

Standard message: Follow directions from emergency services and advice from your doctor at all times.

Category	PM _{2.5} 1-hour average (µg/m ³)	Sensitive groups People with a heart or lung condition, including asthma; people over the age of 65; infants and children 14 years and younger; pregnant women	Everyone else
Good	0-25	No change needed to your normal outdoor activities.	No change needed to your normal outdoor activities.
Fair	25-50	<p>Reduce outdoor physical activity if you develop symptoms like cough or shortness of breath.</p> <p>Consider closing windows and doors until outdoor air quality is better.</p> <p>Follow the treatment plan recommended by your doctor.</p> <p>If you are concerned about symptoms call Nurse on Call on 1300 60 60 24 or see your doctor.</p> <p>If you or anyone in your care has trouble breathing or tightness in the chest, call 000 for an ambulance.</p>	No change needed to your normal outdoor activities.
Poor	50-100 The air is likely to be dusty or smoky	<p>Avoid outdoor physical activity if you develop symptoms like cough or shortness of breath.</p> <p>When indoors, close windows and doors until outdoor air quality is better.</p> <p>Follow the treatment plan recommended by your doctor.</p> <p>If you are concerned about symptoms call Nurse on Call on 1300 60 60 24 or see your doctor.</p> <p>If you or anyone in your care has trouble breathing or tightness in the chest, call 000 for an ambulance.</p>	Reduce outdoor physical activity if you develop symptoms like cough or shortness of breath.

<p>Very poor</p>	<p>100-300</p> <p>The air is very dusty or smoky</p>	<p>Stay indoors as much as possible with windows and doors closed until outdoor air quality is better.</p> <p>If you feel that the air in your home is uncomfortable, consider going to a place with cleaner air (such as an air-conditioned building like a library or shopping centre) if it is safe to do so.</p> <p>Actively monitor symptoms and follow any treatment plan recommended by your doctor.</p> <p>If you are concerned about symptoms call Nurse on Call on 1300 60 60 24 or see your doctor.</p> <p>If you or anyone in your care has trouble breathing or tightness in the chest, call 000 for an ambulance.</p> <p>Listen to your local emergency radio station or visit Emergency Vic for advice</p>	<p>Avoid outdoor physical activity if you develop symptoms like cough or shortness of breath.</p> <p>When indoors, close windows and doors until outdoor air quality is better</p> <p>If you are concerned about symptoms call Nurse on Call on 1300 60 60 24 or see your doctor.</p> <p>If you or anyone in your care has trouble breathing or tightness in the chest, call 000 for an ambulance.</p> <p>Listen to your local emergency radio station or visit Emergency Vic for advice</p>
<p>Extremely poor</p>	<p>> 300</p> <p>The air is very dusty or smoky</p>	<p>Stay indoors with windows and doors closed until outdoor air quality is better and reduce indoor activity.</p> <p>If you feel that the air in your home is uncomfortable, consider going to a place with cleaner air (such as an air-conditioned building like a library or shopping centre) if it is safe to do so.</p> <p>Actively monitor symptoms and follow the treatment plan recommended by your doctor.</p> <p>If you are concerned about symptoms call Nurse on Call on 1300 60 60 24 or see your doctor.</p> <p>If you or anyone in your care has trouble breathing or tightness in the chest, call 000 for an ambulance.</p> <p>Listen to your local emergency radio station or visit Emergency Vic for advice</p>	<p>Stay indoors as much as possible with windows and doors closed until outdoor air quality is better.</p> <p>If you feel that the air in your home is uncomfortable, consider going to a place with cleaner air (such as an air-conditioned building like a library or shopping centre) if it is safe to do so.</p> <p>If you are concerned about symptoms call Nurse on Call on 1300 60 60 24 or see your doctor.</p> <p>If you or anyone in your care has trouble breathing or tightness in the chest, call 000 for an ambulance.</p> <p>Listen to your local emergency radio station or visit Emergency Vic for advice</p>

* The messaging in red font may need to be excluded or adjusted based on COVID-19 advice.

Appendix 2 – 24-hour PM_{2.5} forecast categories and messaging

Standard message: Follow directions from emergency services and advice from your doctor at all times.

Optional messaging: (to be displayed on a day that is forecast to be poor or worse):

If you are concerned about symptoms call [Nurse on Call](#) on 1300 60 60 24 or see your doctor.

If you or anyone in your care has trouble breathing or tightness in the chest, call 000 for an ambulance.

Category	PM _{2.5} 24-hour average (µg/m ³)	Sensitive groups	Everyone else
Good	0 - 12.5	People with a heart or lung condition, including asthma; people over the age of 65; infants and children 14 years and younger; pregnant women	
Fair	12.5 - 25	People with a heart or lung condition, including asthma; people over the age of 65; infants and children 14 years and younger; pregnant women	
Poor	25 - 50	People with a heart or lung condition, including asthma; people over the age of 65; infants and children 14 years and younger; pregnant women	
Very poor	50 - 150	People with a heart or lung condition, including asthma; people over the age of 65; infants and children 14 years and younger; pregnant women	

		<p>Check https://www.epa.vic.gov.au/for-community/environmental-information/air-quality/smoke for changes to air quality throughout the day and follow the advice provided.</p> <p>Plan to take actions to reduce your exposure:</p> <ul style="list-style-type: none"> - Avoid outdoor activity. - Close windows and doors and open them when air quality improves. - Consider spending time in spaces where there is cleaner air (such as an air-conditioned building like a library or shopping centre). <p>Actively monitor symptoms and follow your health management plan recommended by your doctor.</p>	<p>Check https://www.epa.vic.gov.au/for-community/environmental-information/air-quality/smoke for changes to air quality throughout the day and follow the advice provided.</p> <p>Consider actions to reduce your exposure:</p> <ul style="list-style-type: none"> - Reconsider planned outdoor activity - Close windows and doors and open them when air quality improves.
<p>Extremely poor</p>	<p>> 150</p>	<p>Air quality is forecast to be extremely poor.</p> <p>Check https://www.epa.vic.gov.au/for-community/environmental-information/air-quality/smoke for changes to air quality throughout the day and follow the advice provided.</p> <p>Plan to take actions to reduce your exposure:</p> <ul style="list-style-type: none"> - Stay indoors. - Close windows and doors and open them when air quality improves. - Consider spending time in spaces where there is cleaner air (such as an air-conditioned building like a library or shopping centre). - If practical, consider temporarily going to areas where the air quality is forecast to be better. <p>Actively monitor symptoms and follow your health management plan recommended by your doctor.</p>	<p>Air quality is forecast to be extremely poor.</p> <p>Check https://www.epa.vic.gov.au/for-community/environmental-information/air-quality/smoke for changes to air quality throughout the day and follow the advice provided.</p> <p>Plan to take actions to reduce your exposure:</p> <ul style="list-style-type: none"> - Stay indoors as much as practicable. - Close windows and doors and open them when air quality improves. - Consider spending time in spaces where there is cleaner air (such as an air-conditioned building like a library or shopping centre).

* The messaging in red font may need to be excluded or adjusted based on current COVID-19 related advice.

Appendix 3 – Development of the Standard

Integrated smoke, air quality and public health protection messaging was originally developed by the Chief Health Officer (DH) and EPA Victoria during the 2006/2007 summer bushfires - informed by California's¹⁰ experience in managing the public health impacts of wildfire smoke.

During the 2006/2007 summer, approximately 1.2 million hectares were burnt by extended, large area bushfires in the North East and Gippsland (Bairnsdale). Local air quality and Melbourne metropolitan areas were affected by smoke. Smoke from large fires in Tasmania and King Island also impacted Victoria's air quality¹¹.

The 2014 Hazelwood Mine Fire in Morwell and learnings from previous fires informed many changes in Victoria including the creation of the State Smoke Framework, this Standard, and Joint (all agency) Standard Operating Procedures (JSOPs).¹²

Unprecedented fires burned across south-eastern Australia over the 2019-20 bushfire season. About one-fifth of the NSW and Victorian section of Australia's temperate broadleaf and mixed forests biome burned. Following these bushfires, enHealth (standing committee to AHPPC) worked with jurisdictional health and environment agencies to develop nationally consistent air quality categories and public health messaging for 1-hour and 24-hour forecast air quality categories for fine particles in smoke. These were endorsed by AHPPC in 2020 and were consistent with recommendations 14.1 and 14.2 in the Royal Commission into the [National Natural Disaster Arrangements Report](#), 28 October 2020 (sometimes referred to as the Bushfires Royal Commission).

The January 2021 version of the Standard was revised to be nationally consistent with the air quality categories and public health messaging.

In February 2022, AHPPC endorsed the national [enHealth Guidance for public health agencies – Managing prolonged smoke events from landscape fires](#), which informs this Standard.

Learnings from fires in Victoria and national collaboration have informed updates to this version to continue ensuring the community receives the best available information in the best possible way to help to protect their health.

¹⁰ Victoria, Australia and California have a shared history of major bushfire events

¹¹ Bushfire smoke, air quality and health protocol (Department of Health and EPA Victoria 2014).

¹² Until 2014, Victoria's experience of large-area fires with extended smoke events were major bushfires with PM₁₀ fine particles as the smoke component of health concern for the community. This changed to PM_{2.5} with the Hazelwood coal mine fire.

Appendix 4 – References

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enHealth Guidance for public health agencies *Managing prolonged smoke events from landscape fires*, December 2021