

JOINT SOP	
Title	Managing Significant Community Exposure to Fine Particles and Carbon Monoxide in Smoke from Fires.
Purpose	To detail the arrangements between agencies for the provision of air quality advice, assessing public health risk and the procedure for communicating public health protection advice and warnings to affected communities during a significant or prolonged smoke-generating incident or event.
Scope	<p>This Joint Standard Operating Procedure (JSOP):</p> <ul style="list-style-type: none"> • supports Victorian agencies to consistently respond to smoke events and potential community health impacts from events that generate significant levels of smoke • describes how agencies share air pollution (PM_{2.5} and carbon monoxide (CO) information and advice to smoke-impacted communities to reduce their exposure and minimise health impacts • describes decision-making criteria for carbon monoxide (CO) concentrations in smoke • applies to any significant or prolonged smoke-generating incident or event. <p>Occupational smoke exposure procedures for emergency services personnel are not covered by this JSOP.</p> <p>Emergency responders should refer to their own agency guidance for occupational health and safety procedures and should make use of health monitoring services at incidents. per JSOP J08.05</p>
Applicable Agencies	<p>This procedure applies to agency personnel from:</p> <ul style="list-style-type: none"> • CFA • DELWP (FFMVic) • DH • EMV • EPA • FRV
Content	<p>The procedural contents of this SOP are:</p> <ul style="list-style-type: none"> • Step 1: Evaluate situation • Step 2: Assess air quality information and public health risk • Step 3: When to notify • Step 4: Advise the community <p>Decision and communication procedures: Schedule 1 – PM_{2.5} air quality category actions for the IC Schedule 2 – CO concentration trigger levels</p>

<p>Responsibilities</p>	<p>Department of Health (DH)</p> <ul style="list-style-type: none"> • Lead the development and updating of Standards for the protection of public health from exposure to PM_{2.5} and CO in smoke from significant fires in Victoria. • The Chief Health Officer supports the Chief Environmental Scientist with public health advice as needed. • DH does not provide advice on actions required for CO; this is the responsibility of the Incident Controller and EPA. <p>Environment Protection Authority (EPA)</p> <ul style="list-style-type: none"> • Collect and interpret air quality data, information and forecasts to measure and predict community exposure to smoke and assess risks to public health. • Advise the Incident Controller (or SRC if IC not appointed) about the public health risks in the community and recommendations for health protection actions, messages and advice to issue via VicEmergency public warnings and information systems and other channels as necessary. • Issue public warnings and information for events via VicEmergency and other channels as necessary, for reduced air quality not managed by a fire agency (e.g. smoke from fire outside Victoria). <p>State Control Centre (SCC)</p> <ul style="list-style-type: none"> • Support EPA to publish warnings and information for events when there is no for events when there is no Incident Controller. <p>Fire Agencies (FRV, CFA, DELWP)</p> <ul style="list-style-type: none"> • Share first response air monitoring data and observations with EPA. <p>Model the plume and/or fire.</p> <ul style="list-style-type: none"> • Issue public warnings and information for incidents and planned burns under their control.
<p>Definitions</p>	<p>The following definitions apply to this procedure:</p> <p>PM_{2.5} Fine particles with an aerodynamic diameter of less than 2.5 microns are known as PM_{2.5}. Fine particles are a mixture of solid particles and liquid droplets that are small enough to be inhaled deeply into the lungs. They are the smoke component most useful as an air quality monitoring measure to inform recommended precautionary actions for the protection of public health.</p> <p>Carbon monoxide (CO) An odourless, colourless, hazardous gas that is produced during incomplete combustion. During static events and events where limited smoke dispersion may result in the concentration of airborne gases reaching potentially harmful levels, CO is a relevant air quality monitoring measure to inform recommended precautionary actions to protect public health.</p> <p>Burns Controller Equivalent to Incident Controller in a planned burning event.</p> <p>Significant Fires 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 health. Prolonged typically means more than two to three days.</p>

PROCEDURE

1. Evaluate the situation

- 1.1 The Incident Controller is responsible for establishing community air monitoring arrangements (refer JSOP J03.18).
- 1.2 The Incident Controller will ensure that the EPA is provided with the following:
 - 1.2.1 Data from first responder air monitoring at the fire site and in the community (if occurring)
 - 1.2.2 Any plume modelling information and ongoing assessment of likely size and duration of fire activity
 - 1.2.3 Information about any changes to incident management strategies that may change smoke levels and behaviour to EPA.

2. Assess air quality information and public health risk

- 2.1 The EPA will:
 - 2.1.1 Assess the current and forecast air quality using all available intelligence, including air quality data, forecasting, modelling, field observations and meteorological conditions, focusing on where community may be affected.
 - 2.1.2 Assess public health risks and adequacy of any current health protection messages and the need for any further advice based on the air quality forecast.
 - 2.1.3 EPA uploads Air Quality Report to EM-COP and emails it with recommendations for actions to protect public health, at agreed frequency to:
 - Incident Controller
 - airquality@health.vic.gov.au
 - sccvic.intel@scc.vic.gov.au
 - sccvic.srctrl@scc.vic.gov.au

3. Notify when CO trigger levels and PM_{2.5} air quality categories of Poor, Very Poor or Extremely Poor are reached or predicted to be reached

- 3.1 The EPA will:
 - 3.1.1 Notify the Incident Controller when any specified air pollution concentration trigger levels are reached or predicted to be reached as per Schedules 1 and 2 and advise if any further health protective actions should be taken.
 - 3.1.2 Notify DH when any of the following air pollution concentration levels are reached, or predicted to be reached, or exceeded (for information purposes):
 - 1-hour average PM_{2.5} concentration of 300 µg/m³ (see Schedule 1)
 - the air quality is forecast to be Poor, Very Poor or Extremely Poor for more than two days.
 - 3.1.3 Notify the State Burns Coordinator, when smoke is from planned burns, and advise if any further health protection messages should be issued.
 - 3.1.4 Provide air quality report with advice and recommendations for action at agreed frequency.

3.2 The Incident Controller will notify DH when Shelter Indoors is issued for carbon monoxide.

3.3 If there is no Incident Controller (e.g. during smoke incidents from interstate fires), notify the State Response Controller when air quality concentration trigger levels are reached to issue public warnings and information.

4. Advise the community

4.1 Incident Controller authorises the issue of, or updates to, community notifications and warnings via the VicEmergency public warnings and information systems and other channels as necessary, as per SOP J04.01 Public Information and Warnings for Class 1 Emergencies.

4.2 Evacuation of an area for safety due to CO is authorised by the Incident Controller, in accordance with SOP J03.12 Evacuation for Major Emergencies.

4.3 Where PM_{2.5} (1-hour) levels are, or forecast to be, in the Poor, Very Poor or Extremely Poor air quality categories, the EPA has the authority under the EPA legislation for providing and publishing health protection advice and messaging, which includes actions people can take.

4.4 Standard messages for smoke impacts are in the Community Smoke, Air Quality and Health Standard, and in warnings and advice templates.

4.5 When PM_{2.5} levels are consistently in, or forecast to be in, the 1-hour category of Poor, Very poor or Extremely Poor, **for longer than a few days**, the Chief Health Officer, Chief Environmental Scientist, State Response Controller, State Emergency Relief Co-ordinator and other relevant roles, collectively may recommend stronger health protection measures especially for particular settings (eg aged care services). This is based on the assessment of fire status, forecasts, population exposed and assessment of risks to public health, and other contextual factors or intelligence relevant to the incident.

4.6 Where CO concentrations have reached, or are predicted to reach, the trigger levels as specified in Schedule 2, EPA will advise the Incident Controller if any further community notifications, warnings or actions are recommended

4.7 Where no Incident Controller is in place (e.g. during smoke incidents from interstate fires), EPA may publish community notifications and warnings or work with other agencies with capability to publish community notifications and warnings and authorise their release (as per SOP J04.01 Public Information and Warnings for Class 1 Emergencies).

SAFETY

Protection and preservation of life is paramount. This includes:

- safety of emergency response personnel (refer to SOP J08.05 Health Monitoring – Emergency Service Personnel).
- safety of community members, including vulnerable community members and visitors/tourists.

In the application of this JSOP the following safety considerations apply:

- Emergency responders should refer to their own agency guidance for occupational health and safety procedures and should make use of health monitoring services at incidents.

REFERENCE

Related Documents	State Smoke Framework (EMV) Standard for Smoke, Air Quality and Community Health Standard for Managing Exposure to Significant Carbon Monoxide Emissions – Community Health SOP J03.12 Evacuation for Major Emergencies SOP J03.18 Incident Air Monitoring for Community Health SOP J04.01 Public Information and Warnings SOP J08.05 Health Monitoring – Emergency Service Personnel
Environment	Nil

REVIEW

Date Issue	27 September 2022
Date Effective	27 October 2022
Date to be Reviewed	October 2025
Date to Cease	

AUTHORITY

The Emergency Management Commissioner has issued this SOP under section 50 of the Emergency Management Act 2013.

Approved	Signature	Date
Andrew Crisp Emergency Management Commissioner		
Adj Clin Prof Brett Sutton Chief Health Officer, DH		
Prof Mark Taylor Chief Environmental Scientist, EPA		

Schedule 1

Air quality categories for PM_{2.5} - Actions for Incident Controller

Air quality category for PM _{2.5} - 1-hour averages	Predicted duration	Actions for IC:
<p>≥ 300 µg/m³</p> <p>(Extremely Poor)</p>	N/A	<ul style="list-style-type: none"> Assess potential or immediate risks to community health/safety and consider shelter indoors and/or temporarily move people away from direct smoke impacts. All Emergency Vic fire messages should include a general statement about smoke and health.
All 1hr air quality categories consistently Poor, Very Poor or Extremely Poor	Up to a few days	<ul style="list-style-type: none"> Update smoke and health information including protective actions, and air quality messages, based on EPA's air quality report or direct advice from the EPA.
All 1hr air quality categories consistently Poor, Very Poor or Extremely Poor	Greater than a few days	<ul style="list-style-type: none"> Update smoke and health information including protective actions, and air quality messages, based on EPA's air quality report or direct advice from the EPA. <ul style="list-style-type: none"> Note: The State Response Controller, CES, CHO and State Emergency Relief Coordinator (and other relevant roles as necessary), collectively may make recommendations for stronger health protection actions for particular settings.

Schedule 2

Procedure for CO concentration trigger, warning levels and protective actions

Measurement time of concentration	Average concentration	Predicted duration	Warning level and protective actions
1 hour (≥ 30 minutes of consecutive data to estimate 1hr average)	≥ 70 ppm	> 6 hours	Evacuate now
		4-6 hours	Prepare to evacuate
		< 4 hours	Warning: Shelter indoors
4 hours (≥ 2 hours of consecutive data to estimate 4hr average)	≥ 33 ppm	> 8 hours	Evacuate now
		2-8 hours	Warning: Shelter indoors
		< 2 hours	Advice
8 hours (≥ 3 hours of consecutive data to estimate 8hr average)	≥ 27 ppm	> 12 hours	Evacuate now
		6-12 hours	Warning: Shelter indoors
		< 6 hours	Advice