

Submission  
No 45

**INQUIRY INTO HEALTH IMPACTS OF EXPOSURE TO  
POOR LEVELS OF AIR QUALITY RESULTING FROM  
BUSHFIRES AND DROUGHT**

**Organisation:** Public Service Association of NSW

**Date Received:** 30 March 2020

---

# **Public Service Association of NSW**

## **Community and Public Sector Union (SPSF Group) NSW (PSA-CPSU NSW)**

**Submission to Health impacts of exposure to poor levels  
of air quality resulting from bushfires and drought**

**Policy Committee No. 2- Health**

**March 2020**



# About us

The Public Service Association (PSA) of NSW is a state-registered employee organisation representing almost 40,000 members, 80% of whom are employed by the NSW Government and 20% employed by state owned corporations, private sector utilities, Universities, TAFE and NGOs who are covered by the federal counterpart union the Community and Public Sector Union (CPSU).

Established in 1899, the PSA has a long and proud history of acting on behalf of its members in all aspects of their working lives, providing support, expert advice and individual as well as collective representation and advocacy for our members. Our members are the public servants of NSW and workers in service previously public-run but now run by the private and non-government sector.

Call us: 1300 772 679 or 02 9220 0900

Write to us: PSA of NSW GPO Box 3365, Sydney NSW 2001

Email us: [psa@psa.asn.au](mailto:psa@psa.asn.au)

Find us online: [www.psa.asn.au](http://www.psa.asn.au)

Visit us in our offices: In Sydney, the Central West, Central Coast-Hunter, Northern Region, North West Region, South Eastern Region, South Western Region  
<https://psa.asn.au/contact/regional-offices/>



# Executive summary

The Public Service Association welcomes the opportunity to make a submission to this important Inquiry into what has been labelled as the unprecedented bushfire crisis of 2019/2020.

A significant number of our members are required to work in outside atmospheres and a significant number of our members had primary and secondary response roles in the fires requiring these key workers to be exposed to toxic atmosphere during their work. Our members in Department of Planning, Industry and Environment (National Parks and Agriculture Divisions), also have legislative roles to administer welfare of wildlife and domesticated animal welfare.

The ability of the NSW Government to plan for future low air quality events and advise citizens is related to its capacity to adequately monitor and regulate air quality. Since ongoing cuts to staffing due to efficiency dividends, labour expenses caps, and other austerity measures, we say the NSW Government does not employ adequate numbers of people to perform adequate monitoring, reporting, logistical and planning work. This exposes the public and government employees to risk.

# Recommendations

## Recommendation 1

The NSW Government should act on the assumption that exposing citizens to particulate (whether dust or smoke) will have both long and short term detrimental effects and act accordingly, with particular attention paid to those who are vulnerable.

## Recommendation 2

The NSW Government should commission population-level health studies and data to ensure it can accurately track the effects of exposure to low air quality, and this work should be done from a dedicated fund and not be redirected from other public expenditure.

## Recommendation 3

That in its capacity as an employer, NSW Government should immediately begin mitigating and reducing particulate levels in its workplaces and ensure all workers, including workers with disability, suffer no detriment to their health or material conditions. Building standards can be incorporated to include air quality mitigating protections.

## Recommendation 4

That NSW government should provide specific and ongoing advice to vulnerable groups on what to do on low air quality days to manage health risk, and advice on employer's obligations on mitigating risk. This should be appropriate (Easy English, translated into multiple languages) and readily available.

## Recommendation 5

That NSW Government establish sufficient staff within agencies and departments to begin the workforce planning, logistical and advisory work required to mitigate the effects of low air quality for its employees and provide high-quality advice to the community. Such work should have a particular focus on the health risks and therefore responsibility of duty holders to ensure their workers' safety during times of low air quality. Such advisory and regulatory staff should be exempted from the labour expense cap and efficiency dividend budget cuts.

### Recommendation 6

NSW Government should prioritise detailed air quality monitoring, and ensure adequate budgets and staffing are available to undertake it.

### Recommendation 7

NSW Government should prioritise good communications accessible to all members of the NSW community (easily English, mobile optimised, translated into languages, culturally appropriate) and ensure appropriately skilled staff in secure jobs (not temporary or contract roles) are employed to deliver this.

### Recommendation 8

NSW Government should prioritise an easy to understand and accessible information service to advise to all citizens, and deliver the budget to ensure this.

### Recommendation 9

That the SafeWork Authority NSW develop and implement a code of practice for *Working in Poor Air Quality*.

### Recommendation 10

That the Environmental Protection Agency be recognised as having suitability to take a lead role in this work, and its funding be increased and its workforce expanded to take on whole-of-government oversight of the rollout of changes to government practice.

# Terms of reference

1 The health impacts of exposure to poor levels of air quality resulting from bushfires and drought including:

- (a) the impact of at-risk groups including children, pregnant women, people with asthma and other respiratory-related illnesses, the elderly and other high risk groups as well as vulnerable companion animals;
- (b) the impact on people who are exposed to poor outdoor air quality in the workplace;
- (c) the long term impacts of exposure; and
- (d) the effectiveness of various protective materials and strategies to mitigate the health impacts of exposure.

2. The effectiveness of the NSW Government to plan for and improve air quality including:

- (a) the measurement, reporting and public awareness;
- (b) the provision of various protective materials including face masks and air purifiers;
- (c) the ability to ensure the health of at-risk groups;
- (d) the suitability of work health and safety regulations, industrial provisions and related guidelines; and
- (e) the capacity to respond within existing resources and ongoing efficiency dividends.

3. Any related matters.

ToR 1 The health impacts of exposure to poor levels of air quality resulting from bushfires and drought including:

(a) the impact of at-risk groups including children, pregnant women, people with asthma and other respiratory-related illnesses, the elderly and other high risk groups as well as vulnerable companion animals

### Can anyone be safely exposed to low air quality?

As media has made clear in response to recent bushfire and dust events, there is no known safe level of exposure to bushfire smoke particulates. The same is true for dust particulates that are the by-product of drought, with soil particles taken up into the air and inhaled (along with any spore or other microbial material). The citizens of NSW have been subjected to both as a result of recent fires and drought. These events are likely to increase in frequency and severity[i].

While this inquiry's terms of reference list some at-risk groups, other risk groups include those living in poverty, people with disability, Aboriginal and Torres Strait Islander people, migrants and people with other co-morbidities. These groups experience poorer health outcomes than the general population in the ordinary course of matters and their needs should be taken into account.

Our submission includes these people in our community in its references to vulnerable' or 'at risk' groups. Long-term studies make it clear there are associations between exposure to fine particulate air pollution (bushfire smoke) and increases in all-cause, cardiopulmonary, and lung cancer mortality[ii].

It is unclear whether anyone, be they a member of a vulnerable group (children, pregnant women, people with asthma and other respiratory-related illnesses, the elderly and other high-risk groups) or not, can be safely exposed to bushfire smoke. Some studies indicate that exposure below mandated safety thresholds is unsafe[iii], where others are more emphatic, with one US study noting "we found that changes in exposure to PM2.5, even at levels always below the standards, leads to significant increases in hospital admissions for all-cause, cardiovascular and respiratory diseases"[iv]. One Australian study links air pollution events from bushfires and dust storms to increased mortality, noting "smoke events were associated with a 5% increase in non-accidental mortality at a lag of 1 day" and "dust events were associated with a 15% increase in non-accidental mortality at a lag of 3 days"[v].



These issues are particularly acute for a range of at-risk or vulnerable groups, including:

- Those exposed as neonates, with one US study finding increased PM2.5 exposure may be associated with poorer memory and attention function[vi];
- Those exposed while pregnant, such as the Australian women whose premature births were found to be associated with ambient air pollution[vii];
- Those exposed as children, whose asthma was worsened[viii];
- Those exposed among the elderly, where particles may contribute to cognitive decline and Alzheimer's[ix] and increased cardiorespiratory admissions and mortality[x];

Similar well studied and litigated occurrences in Victoria at the Hazelwood Mine Fire (Morwell)[xi], and the 2016 Asthma Thunderstorms have included a combination of smoke, dust particulates and proved to be fatal for significantly large populations.

All the available evidence suggests that exposure to low air quality is detrimental to health.

### **Animals and low quality air exposure**

PSA is unaware of any studies examining the effects of poor air quality on companion animals, however it seems unlikely they would in some way be immune. The effects of low air quality on animals is of particular concern when it comes to support animals of people with disability, and those animals working in our public service, such as emergency services dogs (police, fire accelerant detector dogs) correctives services dogs and horses, and court support dogs.

The PSA covers the two parts of government with legislative responsibility for the welfare of native animals and domestic agricultural animals under the DPIE.

### **'Vulnerable' people are workers too**

The committee should also be clear that the cohort of 'at-risk groups' is not exclusive to the cohort of 'workers'. Many people with disability and other vulnerable people are employees and this must be taken into account. This includes people with immune and respiratory disorders who may not disclose their status. Vulnerable workers should not suffer any financial penalty or loss of wages, or other detriment in their work, if they are unable to work as a result of low air quality. Indeed, to impose any such penalty may place an employer in breach of their anti-discrimination obligations. This is particularly relevant to the NSW Government as employer, where the number of people with disability employed has been falling[i].

### Mitigation should begin now

The health impacts of exposure to poor air quality should be mitigated on the basis that existing evidence makes it clear poor air quality is harmful, and implementing existing mitigation strategies does not have unintended consequences. The wearing and issuing of masks, the installation of air filtration in buildings and structures and the changing of outdoor activities including work are all appropriate, and there is no demonstrable harm in enacting them. The burden on individual's health and upon our health system – and our economy as people become ill, is of a significant magnitude and should be acted upon.

### More study is needed

To determine the exact nature of the specific effects of low air quality and the effectiveness of mitigation measures, studies are needed. These should examine the long and short term effects at a population level, and examine health effects by population group (vulnerable and otherwise). These studies should be culturally sensitive and appropriate, available in multiple languages and include all vulnerable groups. These studies should not be used as a reason to not mitigate and manage low air quality while the studies take place, as sufficient evidence already exists to warrant this. NSW Health should have statistics of a range of increased hospital attendances for respiratory and related presentations over the extended fire season which should form the basis for studying the data.

### Recommendation 1

The NSW Government should act on the assumption that exposing citizens to particulate (whether dust or smoke) will have both long and short term detrimental effects and act accordingly, with particular attention paid to those who are vulnerable.

### Recommendation 2

The NSW Government should commission population-level health studies and data to ensure it can accurately track the effects of exposure to low air quality, and this work should be done from a dedicated fund and not be redirected from other public expenditure.

### Recommendation 3

That in its capacity as an employer, NSW Government should immediately begin mitigating and reducing particulate levels in its workplaces and ensure all workers, including workers with disability, suffer no detriment to their health or material conditions. Building standards can be incorporated to include air quality mitigating protections.

## Recommendation 4

That NSW government should provide specific and ongoing advice to vulnerable groups on what to do on low air quality days to manage health risk, and advice on employer's obligations on mitigating risk. This should be appropriate (Easy English, translated into multiple languages) and readily available.

ToR 1 (b) the impact on people who are exposed to poor outdoor air quality in the workplace;

### NSW Government as employer- and other essential services

The majority of the Association's members are employees of the NSW Government. Others who are employed elsewhere perform essential community roles, such as disability care, essential utilities workers, and tertiary education. This essential work must continue during times of increased health risk such as low air quality events- and indeed is perhaps more important during these times. An office-based worker can complete their work at home, but a home care worker cannot. However, as the above shows, the health risks to employees of doing work during times of low air quality are clear.

The NSW Government has a primary duty to its employees, our members, as the 'person conducting business or undertaking' (PCBU) for the purposes of the *Work Health and Safety Act 2011*. This same obligation is upon all employers, and as well as protecting the health and safety of its workers, the NSW Government should assist businesses and other organisations in discharging their safety duty by providing high quality advice. In doing so, employers including NSW Government will be managing liability relating to workers' compensation claims for injuries or illness caused by low air quality. The Association's membership experienced several incidents where people were required to undertake outside work and suffered respiratory issues and were required to be hospitalised.

Our recommendations are based on three principles:

1. That no employee should be exposed to the hazard of low air quality by their employer where it can be avoided; and
2. That employers are obliged to take reasonable steps to mitigate the effects of low air quality on employees; and
3. No employee should suffer loss or detriment because of the employer's mitigation action- employees should not for example) be required to go without pay or access their own leave as their employer mitigates their risk.



The mitigation actions employers should take will be different in each workplace, but can be broadly grouped.

To assist the committee, and for the purposes of responding to the Terms of Reference, we have grouped our members into four categories to describe the categories of exposure of PSA members, which will directly inform our response and mitigation suggestions.

These categories are:

**1. Workers who are:**

- a. impacted by bushfire smoke as a result of commute to and from work, and
- b. whose exposure to bushfire smoke, apart from their commute, is the incidental entry of bushfire smoke to their workplace through entries and exits as citizens enter and exit.

Examples of PSA members in this group include:

Service NSW staff\*;

Special Constables at NSW Parliament House;

Revenue NSW staff;

Policy, administrative and advisory staff in NSW government entities in a 'typical office environment';

University professional staff ('Group 1').

\* As an exemption Service NSW Staff had several locations that during the bushfires were severely affected inside their branches with thick smoke and the Association had to intervene.

**2. Workers who are:**

- a. impacted by bushfire smoke as a result of commute to and from work, and
- b. whose exposure to bushfire smoke, apart from their commute, is the incidental entry of bushfire smoke to their workplace through entries and exits, and
- c. whose job it is to perform advisory work relating to bushfires/ bushfire smoke to assist the community, business and government in mitigating and managing the risk from bushfire smoke.

Examples of PSA members in this group include:

SafeWork NSW staff;  
Premier and Cabinet staff;  
Ministerial and Member of Parliament advisory staff;  
Rural Fire Service,  
National Parks and Department of Primary Industry and Environment (DPIE)  
administrative and policy staff;  
Environmental Protection Authority staff;  
Marketing and communications staff across all entities ('Group 2').

**3. Workers who are:**

- a. required as part of the normal course of their duties to be outdoors, and
- b. may be engaged in directly in managing fires or have other duties.

Examples of PSA members in this group include:

Rural Fire Service including mitigation staff;  
National Parks rangers;  
Correctional Officers  
Parklands horticulturalists (for example, Royal Botanical Gardens, Centennial Park, Western Sydney Parklands);  
Conservation field workers ('Group 3'),

**4. Workers who are:**

- a. required as part of the normal course of their duties to be outdoors, and
- b. whose work also requires them to exercise a duty to another.

Examples of PSA members in this group include:

Custodial Officers (duty is towards prisoners);  
School aides (duty is towards children);  
Museum and botanical gardens staff (duty is towards members of the public);  
Parks staff, such as workers at Jenolan Caves (duty is towards members of the public) ('Group 4').

If a similar taxonomy in categorising the workforce was adopted, consistent with employer obligations as PCBU and the principles above, employers including the NSW Government can immediately begin mitigating the effects of poor air quality in workplaces, by:

**For Group 1 employees:**

- a. installing air filtration units in offices and workplaces, regularly changing filters as required;
- b. providing appropriate masks for staff to wear on their commute and during work hours, and replacing them as required;
- c. Provide better technological support to allow staff to transact their citizen-facing work without needing to be present in an office and expanding flexible work options to facilitate this;
- d. Ensuring adequate staff are employed in citizen-facing roles to rotate staff through to reduce exposure and providing masks;
- e. Providing special leave to employees who are unable to work from home who cannot travel to, or work in, their ordinary workplace as a result of low air quality.

**For Group 2 employees:**

- a. installing air filtration units in offices and workplaces, regularly changing filters as required;
- b. providing appropriate masks for staff to wear on their commute and during work hours, and replacing them as required;
- c. Expanding the overall number of staff employed in roles relating to air quality monitoring and advice to assist the community, business and government in mitigating and managing the risk, without taking these staffing numbers from elsewhere in the public service;
- d. Providing special leave to employees who are unable to work from home who cannot travel to, or work in, their ordinary workplace as a result of low air quality.

**For Group 3 employees:**

- a. for those employees whose work requires them to be outdoors who are not engaged in mitigation or fire management duties, that their employer immediately direct the cessation of work and those employees work indoors or are placed on special leave;
- b. for those employees whose work requires them to remain outside (for example, they are engaged in fire or fire mitigation work) providing them with appropriate personal protective equipment (PPE) including masks, respirators, uniforms, gloves and goggles;

- c. installing air filtration units in offices and workplaces (for example crew break rooms) regularly changing filters as required;
- d. providing appropriate masks for staff to wear on their commute and during work hours, and replacing them as required;
- e. Ensuring adequate staff are employed to rotate staff through to reduce exposure;
- f. Providing special leave to employees who are unable to work from home, travel to, or work in, their ordinary workplace as a result of low air quality.

**For Group 4 employees:**

- a. that their employer immediately direct the cessation of work and those employees work indoors or are placed on special leave, and that those citizens in their charge are also taken indoors;
- b. installing air filtration units in offices and workplaces, regularly changing filters as required, in all work and citizen spaces (for example, in break rooms and in spaces like classrooms or inmate rooms);
- c. providing appropriate masks for staff to wear on their commute and during work hours, and replacing them as required;
- e. Ensuring adequate staff are employed to rotate staff through to reduce exposure;
- f. Indemnifying employees against future claims for injury from someone to whom an employee was meant to exercise a duty but was unable to exercise that duty because their employer failed to make adequate provision to allow them to exercise their duty (for example, refused to provide adequate masks or direct indoor activity for inmates or did not install filtration in the workplace);
- e. Providing special leave to employees who are unable to work from home, travel to, or work in, their ordinary workplace as a result of low air quality.

Should something like this be adopted, it would allow the NSW both as employer and as advisor to business, organisations and community in NSW, to issue advice and guidance to assist workers and employers in reducing the harmful effects of low air quality.

## Recommendation 5

That NSW Government establish sufficient staff within agencies and departments to begin the workforce planning, logistical and advisory work required to mitigate the effects of low air quality for its employees and provide high-quality advice to the community. Such work should have a particular focus on the health risks and therefore responsibility of duty holders to ensure their workers' safety during times of low air quality. Such advisory and regulatory staff should be exempted from the labour expense cap and efficiency dividend budget cuts.

ToR 2. The effectiveness of the NSW Government to plan for and improve air quality including:

- (a) the measurement, reporting and public awareness; and
- (b) the provision of various protective materials including face masks and air purifiers; and
- (c) the ability to ensure the health of at-risk groups; and
- (e) the capacity to response within existing resources and ongoing efficiency dividends.

Measuring air quality and reporting on it, and ensuring citizens are aware of that information and how to respond, requires dedicated, skilled public servants. The NSW Government imposed and has increased budget cuts through the form of increasing efficiency dividends and a 'labour expense cap' to artificially reduce staffing numbers in our public service from 2011. NSW grows by over 100,000 people annually, but the number of employees of NSW Government employs does not reflect that growth. There are not enough people officers or equipment to monitor air quality effectively, report and inform us on how to manage our exposure to low air quality.

The NSW Government has an unrivalled capacity to undertake air quality monitoring and disseminate this information. It already undertakes monitoring of air quality, but its reporting and awareness raising are less than ideal. It could install monitoring equipment on public buildings all over the state, such as schools, fire and ambulance stations, Service NSW offices, corrections facilities, our museums, courts and tribunals. It could take this information and disseminate it to the citizens of NSW in effective and meaningful ways that meet the needs of our community- translated into various community languages, in easy English, and on mobile. None of this is possible with an artificially low budget and staffing profile.



The public information available to citizens of NSW from the NSW Government during recent bushfires was poor, and in the Association's view, reflects the loss of capacity driven by NSW Government capping staff through the so-called 'labour expense cap' and the increasing "efficiency dividend" budget cuts.

This is not a reflection on the hard work done by NSW public servants rather simply that there are not enough of them, and in particular the losses of information and communication technology and communications and media (old and new) skills through reduced staffing and reduced technical staff.

## How to get air quality information to the people of NSW

What would be considered the basics of marketing and public information appear not to have been undertaken to ensure citizens have easy access to data about air quality at a time of great need. Citizens of NSW searching for information on whether they should stay indoors, wear a filtration mask, or go to work, were not well served by their Government. Commercial entities have filled this gap, leaving the most vulnerable without information or subject to commercial imperatives.

For example, while the NSW Government does provide information on its website/s regarding air quality, it appears not to have engaged in Search Engine Optimisation (SEO) and/or geotargeted advertising (making search results appear to NSW residents) so people can find those sites.

Responsive geotargeting would be simple: each day, those areas worst impacted by poor air quality could be targeted to ensure this information appears to those searching, and in their social media feed.

The same lack of advertising would also appear to be true for paid advertising, either on traditional or new media during the recent bushfire and dust events of 2019-2020.

For example, a mobile search for 'Sydney air quality' brings a top result of a worldwide measurement site [www.aqicn.com](http://www.aqicn.com):

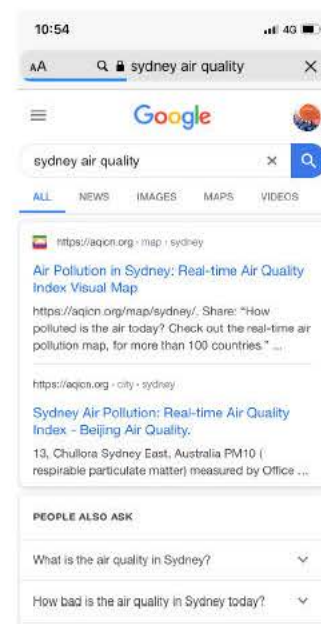


Fig. 1: screenshot of 'sydney air quality' google search

The relevant NSW Government Department, Department of Primary Industry and Environment (DPIE) is the third result in this search- below the 'fold' for a desktop monitor. [www.aqicn.com](http://www.aqicn.com) has the valuable real estate of featured snippet' on this search on desktop- it is the first thing someone searching on their phone would see. DPIE could have purchased this placing, and optimised to be the first organic search result. On mobile, the most commonly used platform, the DPIE website providing air quality information is poorly optimised, and requires side-to-side scrolling to view the data. There is no easy English or translated offering. It is too detailed and resembles a spreadsheet. You have to sign up for updates, which will significantly reduce uptake.

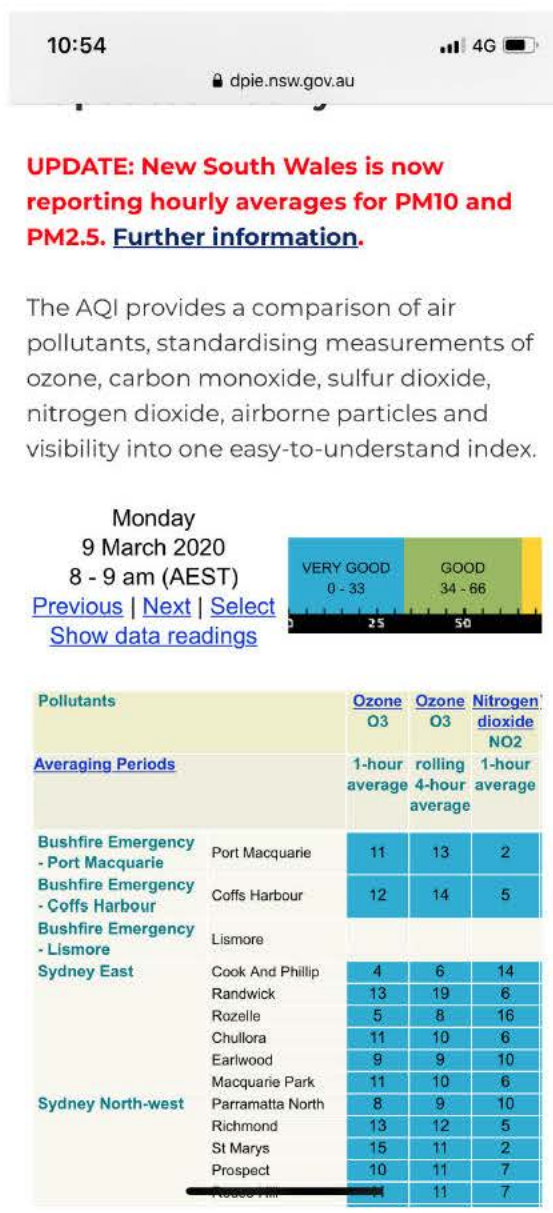
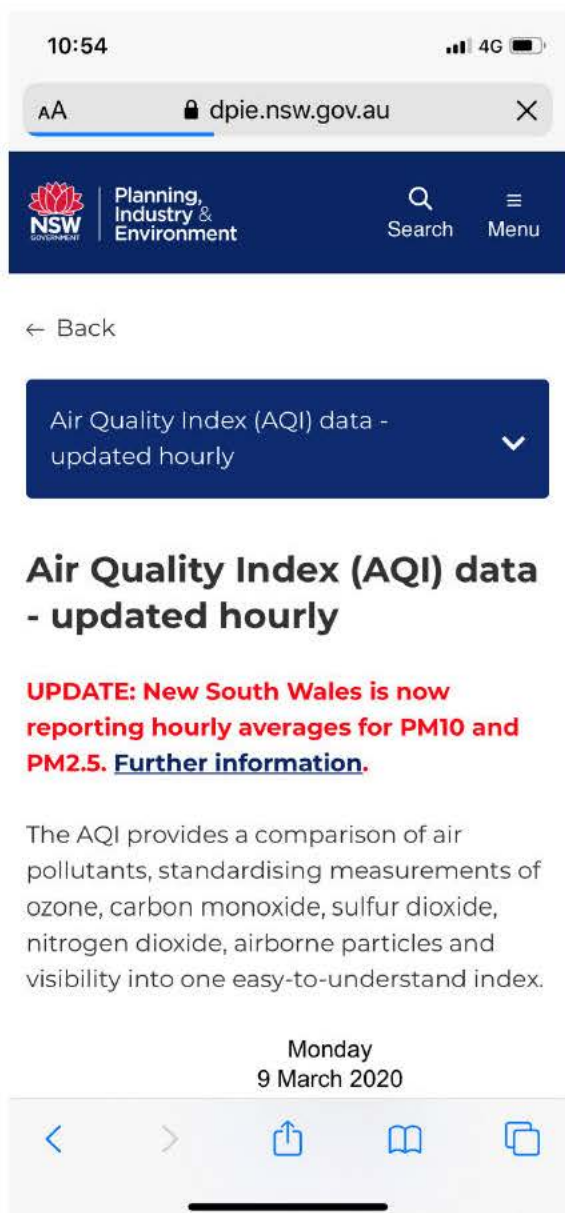


Fig. 2: DPIE website on mobile phone screenshot, side by side panels



Fig. 3: AirVisual app screenshot



Fig. 4: AirVisual marketing linkthrough

What this means is citizens are making choices about the source of their information on air quality from a field in which the NSW Government appears not to compete.

By contrast, the most popular app, AirVisual, has a clean interface and colour-coded information, with intuitive control. It colour-codes its data and provides pictorial representations of quality: for example, the best air quality is represented by green and a smiling face, with worst air quality represented by red (and deep purple) and a face wearing a gas mask.

AirVisual is a commercial product which links through to sale sites for monitoring devices and filtration masks. This app is English-only.

You can nominate your geographic location on a map and see the air quality near you- and it tells you where the information is coming from: either modelled from satellite data or from a monitoring device. You are then prompted to buy an air monitoring unit- directing money to the commercial entity providing the app and essentially paying to build a more accurate data set for it, increasing the value of the commercial app. It is the most popular air monitoring app, as the NSW Government has all but vacated this space.

This is not a sustainable alternate to the Government improving their offering as there is no viability to extend Air Visual beyond areas of high density such as rural and regional areas.

## NSW Government has built effective, popular apps before

The popularity of the Live Traffic and Fires Near Me apps show NSW Government once had the capacity to build good, popular apps with quality data for the information of NSW citizens. These apps were launched in 2011 and 2009 respectively (ie prior to increased efficiency dividend budget cuts and the labour expense cap).

The citizens of NSW should not be relying on a commercial provider with a dedicated sales platform for easy to understand information about how to manage their exposure to hazardous low air quality. This app (and all other commercial apps) provide information only where it suits their commercial imperatives. This app reflects this in its language: English only. As the NSW Government notes, over 27.6% of residents of NSW were born overseas and we speak more than 275 languages. The most popular air quality app serve parts of our community poorly, but it is not required to serve the NSW community. The NSW Government is required to serve the entire NSW region and also people in a variety of languages.

The NSW Government should invest in the digital tools and human capacity to build apps that provide information on air quality in Easy English and community languages. This app should be easy to use and distil complex monitoring information into advice, such as “today is a work at home day” or “all outdoor work should cease today” or “wear your mask today. You can pick up your mask from these Service NSW locations.”

## Low air quality should be made a priority

Simple mitigation strategies, such as making filtration masks available to citizens from Service NSW locations, have not been put in place. This may be a feature of reducing staffing in agencies (both public health and otherwise) whose job it would be to do such public planning and distribution. By reducing the numbers of public servants, the NSW government has reduced its capacity to plan and respond- not just to low air quality events, but other like events, like pandemics or other environmental disasters.

## Recommendation 6

NSW Government should prioritise detailed air quality monitoring, and ensure adequate budgets and staffing are available to undertake it.

## Recommendation 7

NSW Government should prioritise good communications accessible to all members of the NSW community (easily English, mobile optimised, translated into languages, culturally appropriate) and ensure appropriately skilled staff in secure jobs (not temporary or contract roles) are employed to deliver this.

## Recommendation 8

NSW Government should prioritise an easy to understand and accessible information service to advise to all citizens, and deliver the budget to ensure this.

### ToR 2 (d) the suitability of work health and safety regulations, industrial provisions and related guidelines;

The recent bushfires caused significant economic and industrial disruption in NSW.

We had Ports workers ceasing work, and a number of outdoor workers ceasing work on construction sites all over Sydney. The economic losses have not been assessed but the number of occasions workplaces were required to be shut down, and the number of workers in these workplaces, meant that the cost would easily have gone into the tens or hundreds of millions in lost production. The health impacts for those workers unable to cease work will likely be a multiplier of these short term losses.

It also caused significant issues industrially when workers had to take the initiative and utilise Section 84 of the *Work Health and Safety Act (NSW) 2011* to cease work, when there were not clear work health and safety guidelines as to monitoring requirements and standards. Shifts could have been cancelled prior to predicted low air quality days or alternate work could be made available, or work continued with adequate PPE.

There is no clear code of practice nor easy reference to the Australian Standards of safe work atmosphere despite there being a Regulation.

## **Work Health and Safety Regulation 2017**

### **49 Ensuring exposure standards**

for substances and mixtures not exceeded

A person conducting a business or undertaking at a workplace must ensure that no person at the workplace is exposed to a substance or mixture in an airborne concentration that exceeds the exposure standard for the substance or mixture.

Maximum penalty—

- (a) in the case of an individual—\$6,000, or
- (b) in the case of a body corporate—\$30,000.

## **Work Health and Safety Regulation 2017**

### **50 Monitoring airborne contaminant levels**

(1) A person conducting a business or undertaking at a workplace must ensure that air monitoring is carried out to determine the airborne concentration of a substance or mixture at the workplace to which an exposure standard applies if—

- (a) the person is not certain on reasonable grounds whether or not the airborne concentration of the substance or mixture at the workplace exceeds the relevant exposure standard, or
- (b) monitoring is necessary to determine whether there is a risk to health.

Maximum penalty—

- (a) in the case of an individual—\$6,000, or
- (b) in the case of a body corporate—\$30,000.

(2) A person conducting a business or undertaking at a workplace must ensure that the results of air monitoring carried out under subclause (1) are recorded, and kept for 30 years after the date the record is made.

Maximum penalty—

- (a) in the case of an individual—\$1,250, or
- (b) in the case of a body corporate—\$6,000.

(3) A person conducting a business or undertaking at a workplace must ensure that the results of air monitoring carried out under subclause (1) are readily accessible to persons at the workplace who may be exposed to the substance or mixture.

Maximum penalty—

- (a) in the case of an individual—\$3,600, or
- (b) in the case of a body corporate—\$18,000.

The absence of a Code of Practice or Guidelines for the working public made it hard for workers and their employers to make decisions regarding the relative safety of working in the conditions prevalent during a bushfire.

Victoria also experience bushfire smoke and the Victorian Trades Hall under different Work Health and Safety legislation undertook an exercise of providing guidance to workers relative to their environmental protection agency readings and the Australian Standards. This guidance was done in consultation with Victoria's Worksafe Authority. This guidance is listed in Annexure A.

### **Recommendation 9**

That the SafeWork Authority NSW develop and implement a code of practice for *Working in Poor Air Quality*.

### **Recommendation 10**

That the Environmental Protection Agency be recognised as having suitability to take a lead role in this work, and its funding be increased and its workforce expanded to take on whole-of-government oversight of the rollout of changes to government practice.

---

Submission contact:

## References

- [i] Garnaut, R. The Garnaut Climate Change Review, The Australian Government, 2008, 125, 129
- [ii] C. Arden Pope III, PhD; Richard T. Burnett, PhD; Michael J. Thun, MD; et al Eugenia E. Calle, PhD; Daniel Krewski, PhD; Kazuhiko Ito, PhD; George D. Thurston, ScD, Lung Cancer, Cardiopulmonary Mortality, and Long-term Exposure to Fine Particulate Air Pollution, March 6, 2002, Author Affiliations, JAMA. 2002;287(9):1132-1141. doi:10.1001/jama.287.9.1132
- [iii] Muthiah Vaduganathan MD MPH, Giuseppe De Palma MD PhD, Alessandra Manerba MD, Matteo Goldoni PhD, Marco Triggiani MD, Pietro Apostoli MD, Livio Dei Cas MD, Savina Nodari MD, Risk of Cardiovascular Hospitalizations from Exposure to Coarse Particulate Matter (PM10) Below the European Union Safety Threshold, The American Journal of Cardiology, Volume 117, Issue 8, 15 April 2016, Pages 1231-1235
- [iv] Maggie Makar, Joseph Antonelli, Qian Di, David Cutler, Joel Schwartz, and Francesca Dominici, Estimating the Causal Effect of Fine Particulate Matter Levels on Death and Hospitalization: Are Levels Below the Safety Standards Harmful?, Epidemiology. 2017 Sep; 28(5): 627-634.
- [v] Fay Johnston, Ivan Hanigan, Sarah Henderson, Geoffrey Morgan, David Bowman, Extreme air pollution events from bushfires and dust storms and their association with mortality in Sydney, Australia 1994-2007, Environmental Research, Volume 111, Issue 6, August 2011, Pages 811-816
- [vi] Yueh-Hsiu Mathilda Chiu, Hsiao-Hsien Leon Hsu, Brent A. Coull, David C. Bellinger, Itai Kloog, Joel Schwartz, Robert O. Wright, Rosalind J. Wright, Prenatal particulate air pollution and neurodevelopment in urban children: Examining sensitive windows and sex-specific associations, Environment International, Volume 87, February 2016, Pages 56-65
- [vii] C Hansen, A Neller, G Williams, R Simpson, Maternal exposure to low levels of ambient air pollution and preterm birth in Brisbane, Australia, 18 July 2006
- [viii] Nathan Rabinovitch, Matthew Strand, and Erwin W. Gelfand, Particulate Levels Are Associated with Early Asthma Worsening in Children with Persistent Disease Particulate Levels Are Associated with Early Asthma Worsening in Children with Persistent Disease, American Journal of Respiratory and Critical Care Medicine, Volume 173, issue 10
- [ix] Ulrich Ranft, Tamara Schikowski, Forothee Sgiri, Jean Jirutmann, Ursula Kramer, Long-term exposure to traffic-related particulate matter impairs cognitive function in the elderly, Environment Research, Volume 109, Issue 8, November 2009, Pages 1004-1011
- [x] Jaana I. Halonen, Timo Lanki, Tarja Yli-Tuomi, Pekka Tiittanen, Markku Kulmala and Juha Pekkanen, Particulate Air Pollution and Acute Cardiorespiratory Hospital Admissions and Mortality Among the Elderly, Epidemiology, Vol. 20, No. 1 (January 2009), pp. 143-153
- [xi] Hazelwood Health Study, <https://www.monash.edu/hazelwood-health-study/community-links/media>
- [xii] Public Service Commission, Workforce Profile Report 2019
- [xiii] Victorian Trades Hall Council- Approved Safety Standard- Air Quality