# Maintaining indoor air quality in New York amid wildfire smoke from Canada - by Eric Mitchell and Daniel Galarza

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Smoke from Canadian wildfires had an astonishing presence in New York this summer, and, even though wildfire season traditionally ends in August, now is the time for property owners to plan for a possible future recurrence. Canadian wildfires are expected to be even worse in the future, and steps can be taken to maintain indoor air quality if that situation arises again.

In June, New York City's world-famous skyline literally disappeared under a blanket of Canadian smoke. The Air Quality Index, which runs from 0 to 500, was above 480 in New York City on June 7th. A study just published by the U.S. Centers for Disease Control and Prevention found that asthma-associated emergency room visits jumped 82% in New York State on that same day.

This summer's experience provides a warning to be heeded. The potential for higher-than-normal fire activity in Canada is already expected to remain through September this year, and wildfire season there traditionally starts in May. The steps that should be taken by property owners in preparation include the following:

First, buildings should be assessed to ensure that their facades are tightly sealed. It's especially important to make certain that windows and doors, when closed, are tight. Many older buildings have lost some of that tightness over time.

Second, air quality – both outdoor and indoor – should be monitored. Outdoor conditions often

determine indoor ones, and outdoor air quality measures are readily available through weather forecasts and on cell phones. In addition, the U.S. Environmental Protection Agency offers a free AirNow Mobile App.

Systems for monitoring indoor air quality are widely available commercially. The specific needs of individual buildings should be assessed, and appropriate systems installed.

Third, air filtration is key, as it determines what particles enter indoor spaces through the HVAC system. High-level MERV 13 air filters should be installed in all such systems. These filters can be easily installed and should be replaced every three to six months, depending on the specific conditions being addressed.

Fourth, air purifiers should be installed to capture pollutants and particles that have emerged in indoor spaces. These purifiers typically feature high-efficiency particulate air (HEPA) filters that capture impurities before recirculating cleaned air. Some also use ultraviolet (UV) germicidal irradiation in the form of UV lamps that target viruses and bacteria.

UV lamps were frequently installed, for instance, in office bathrooms during the height of the COVID-19 pandemic. Air ionizers can similarly be used to augment removal of airborne particles.

Fifth, and trickiest of all, flexibility in ventilation should be accommodated. Here the flexibility must be implemented in accordance with regulatory standards, which typically allow adjustments based on the population density of a space: the more people involved, the more ventilation is needed.

The challenge here is that increased ventilation means more outdoor air. In response to the COVID-19 pandemic, increased outdoor air was essential. In response to smoke from wildfires, minimal outdoor air is required.

Fortunately, traditional wildfire season and virus season in the United States, including peaks in flu (December to February) and spikes in COVID-19 (November to April), are at opposite times of the year. But increasingly incidences occur more broadly and may even overlap. Fortunately, too, in all of these cases, air filtration protects indoor air quality from the outside.

In the future, more attention from regulators may be required in managing the permitted balance of ventilation that is needed. The advent of wildfire smoke on the scale that New York saw in June and that other parts of the country experienced during the summer requires further consideration of the criteria for ventilation adjustments.

In any case, when building management systems are adjusted to alter ventilation, care should be taken to return ventilation to its original position when air quality conditions revert to normal.

The steps described above are crucial to maintaining indoor air quality. They will likely become increasingly commonplace across New York and nationally.

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