

## MASSACHUSETTS MEDICAL SOCIETY HOUSE OF DELEGATES

Item #: 7  
Code: CEOH Report A-17 A-3  
Title: Gasoline-Powered Leaf Blowers  
Sponsor: Committee on Environment and Occupational Health  
Heather Alker, MD, Chair

Referred to: Reference Committee A  
Kevin O'Callaghan, MD, Chair

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### Background

Gasoline-powered leaf blowers (GLBs) pose health risks to both workers and the general public. There are at least four municipalities in Massachusetts that already have regulated GLBs and several others that are considering instituting such limitations or bans on GLBs. Citizens of one of these towns approached the MMS for its position.

In 2016, the Medical Society of New York implemented policy on GLBs, which states:

RESOLVED, that the Medical Society of the State of New York call upon the New York State Department of Environmental Conservation and the manufacturers of the gas leaf blowers develop guidelines that would dramatically reduce the toxic emissions and noise level of gas leaf blowers; and be it further

RESOLVED, that the Medical Society of the State of New York also encourage that New York State and other governmental entities promote the use of non-polluting alternatives to gas leaf blowers; and be it further

RESOLVED, that a copy of this resolution be transmitted to the American Medical Association for consideration at its House of Delegates.

### Current MMS Policy

The MMS has the following relevant existing policy:

#### **Fossil Fuels**

That in order to promote public health and safety for current and future generations, the MMS will promote education of its membership and the public about the health impacts of fossil fuel usage and engage in advocacy to reduce the use of fossil fuels and increase healthier and safer energy sources. (D)

*MMS House of Delegates, 11/15/08*

### Relevance to MMS Strategic Priorities

MMS strategic priorities for 2016–2017 include increasing the focus on population health.

## Discussion

Occupational health risks to landscape workers include eye injury, vibration sickness, and hearing loss. Importantly, the volatile organic compounds and other carcinogens produced by GLBs have been shown to penetrate commonly used dust masks.<sup>1,2,3</sup>

The noise pollution generated by GLBs constitutes a health hazard for both machine operators and bystanders. The World Health Organization (WHO) recommends an outdoor noise level less than 55 decibels (dB); the risk of hearing damage is increased at noise levels above 75 dB. GLBs produce noise levels of 70–75 decibels at 50 feet and can reach up to 100 decibels at the operator's ear.<sup>4</sup> Furthermore, the Occupational Safety and Health Administration (OSHA) requires machine operators to utilize hearing protection for noise above 85 dB, but many operators wearing hearing protection are not adequately protected due to improper fit or because they do not wear protection continuously.<sup>5</sup> Excessive noise pollution leads to impaired quality of life. According to the Environmental Protection Agency (EPA), "noise degrades quality of life by impairing communication and social interaction, reducing the accuracy of work, particularly complex tasks, and creating stressful levels of frustration and aggravation that last even when the noise has ceased."<sup>6,7,8</sup>

GLBs pose a threat to public health not only by aerosolizing respiratory irritants such as pollens and molds, leading to allergy, asthma, and COPD exacerbations, but also by elaborating known carcinogens including particulate matter (PM), formaldehyde, benzene, and nitrogen oxides

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<sup>1</sup> Rudel et al. New Exposure Biomarkers as Tools for Breast Cancer Epidemiology, Biomonitoring, and Prevention: A Systematic Approach Based on Animal Evidence. *Environmental Health Perspectives*. September 2014.

<sup>2</sup> *Vibration*. Environmental Health and Safety, Iowa State University. 2017. ([www.ehs.iastate.edu/occupational/ergonomics/vibration](http://www.ehs.iastate.edu/occupational/ergonomics/vibration))

<sup>3</sup> *Respiratory Protection Tools*. Occupational Safety and Health Administration (OSHA). Personal Protective Equipment. Extensive Service West Virginia University. ([www.osha.gov/dte/grant\\_materials/fy06/46c6-ht21/english\\_b\\_5\\_ppe.ppt](http://www.osha.gov/dte/grant_materials/fy06/46c6-ht21/english_b_5_ppe.ppt))

<sup>4</sup> A Report to the California Legislature on the Potential Health and Environmental Impacts of Leaf Blowers. *California Environmental Protection Agency Air Resources Board, Mobile Source Control Division*. February 2000. ([www.nonoise.org/resource/leafblowers/carbleafblower2000.pdf](http://www.nonoise.org/resource/leafblowers/carbleafblower2000.pdf))

<sup>5</sup> Protection for ears and hearing, affected from noise. *American Academy of Otolaryngology*. Brochure. 2017

<sup>6</sup> Noise Pollution Policy. Massachusetts Department of Environmental Protection. February 1990. ([www.mass.gov/eea/agencies/massdep/air/programs/noise-pollution-policy-interpretation.html](http://www.mass.gov/eea/agencies/massdep/air/programs/noise-pollution-policy-interpretation.html))

<sup>7</sup> Noise + Health Resources. Source: Quiet Communities, quoting World Health Organization, 2011, Environmental Protection Agency flyer, Mt Sinai Pediatric Environmental Health Letter, 2010. ([www.quietcommunities.org/noise-health-resources/](http://www.quietcommunities.org/noise-health-resources/))

<sup>8</sup> A Report to the California Legislature on the Potential Health and Environmental Impacts of Leaf Blowers. *California Environmental Protection Agency Air Resources Board, Mobile Source Control Division*. February 2000. ([www.nonoise.org/resource/leafblowers/carbleafblower2000.pdf](http://www.nonoise.org/resource/leafblowers/carbleafblower2000.pdf))

(NO<sub>x</sub>).<sup>9,10</sup> In addition, GLBs aerosolize other carcinogens, such as pesticides, and neuro- and fetotoxins like lead, mercury, and other heavy metals that are in the soil and subsoil, and which can potentially be distributed for a several block radius.<sup>11,12,13</sup>

The particulate matter GLBs elaborate, especially PM less than 2.5 microns, can penetrate deep in the respiratory tree; it can cause or exacerbate asthma, chronic obstructive pulmonary disease, malignancies, and heart attacks.<sup>14</sup> Particulate matter has also been linked to an increase in autism among children whose mothers were exposed during the third trimester of pregnancy.<sup>15</sup>

### Conclusion

The noise, particulate matter, and other toxic emissions of gasoline-powered leaf blowers pose a risk to workers and the public, especially vulnerable populations such as children and elderly. The committee recommends adopting policy to recognize and address the health consequences of GLBs as well as inform municipalities who are considering implementing limitations or bans.

### Recommendations:

- 1. That the MMS adopt the following adapted from American Medical Association policies:**

**The MMS recognizes noise pollution as a public health hazard, with respect to hearing loss, and supports initiatives to increase awareness of the health risks of loud noise exposure. (HP)**

**The MMS urges that maximum feasible reduction of all forms of air pollution, including particulates, gases, toxicants, irritants, smog formers, and other biologically and chemically active pollutants. (HP)**

- 2. That the MMS acknowledges the increased risk of adverse health consequences to workers and general public from gas-powered leaf blowers including hearing loss and cardiopulmonary disease. (HP)**

Fiscal Note:

No Significant Impact

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<sup>9</sup> A Report to the California Legislature on the Potential Health and Environmental Impacts of Leaf Blowers. *California Environmental Protection Agency Air Resources Board, Mobile Source Control Division*. February 2000. ([www.nonoise.org/resource/leafblowers/carbleafblower2000.pdf](http://www.nonoise.org/resource/leafblowers/carbleafblower2000.pdf))

<sup>10</sup> Riyaz, Shipchandler. VOC Emissions from Gas Powered Leaf Blowers in Chicago Metropolitan Region. *Waste Management & Research Center*. January 25, 2008. ([www.cleanaircounts.org/documents/Leaf%20Blowing%20Emissions%20Modeling%20Report.pdf](http://www.cleanaircounts.org/documents/Leaf%20Blowing%20Emissions%20Modeling%20Report.pdf))

<sup>11</sup> Fitz, Arcemont, et al. Determination Particulate Emission Rates from Leaf Blowers. *Environmental Protection Agency*. 2006.

<sup>12</sup> Massachusetts 2012 Quality Air Report. Department of Environmental Protection, Bureau of Waste Prevention, Division of Air and Climate Programs. July 2013. ([www.mass.gov/eea/docs/dep/air/priorities/12aqrpt.pdf](http://www.mass.gov/eea/docs/dep/air/priorities/12aqrpt.pdf))

<sup>13</sup> 2010 Clear Air Plan. Bay Area Air Quality & Public Health Protection, Bay Area Air Quality Management District. September 2010. ([www.baaqmd.gov/plans-and-climate/air-quality-plans/current-plans](http://www.baaqmd.gov/plans-and-climate/air-quality-plans/current-plans))

<sup>14</sup> Air Pollution Resources. Source: Quiet Communities, quoting American Heart Association, American Stroke Association, Lancet Oncology. October 2013. ([www.quietcommunities.org/air-pollution-resources/](http://www.quietcommunities.org/air-pollution-resources/))

<sup>15</sup> Raz, Roberts, Lyall, Hart, Just, Laden, Weisskopf. Autism Spectrum Disorder and Particulate Matter Air Pollution before, during, and after Pregnancy: A Nested Case–Control Analysis within the Nurses' Health Study II Cohort. *Environmental Health Perspectives*. 2015. 123:264–270

(Out-of-Pocket Expenses)

FTE:  
(Staff Effort to Complete Project)

Existing Staff