



# Fact Sheet: Gas-Powered Leaf Blowers

## Summary

The droning roar of gas leaf blowers is one of the defining sounds of Montclair today. These extremely inefficient machines generate startling levels of noise and pollution in our town, disrupting residents' ability to work, learn, and enjoy a moment's peace in their homes. They also create serious risks to public health. Just one gas leaf blower puts more pollutants into the air in a single hour than a Toyota Camry driving halfway across the United States.<sup>1</sup> Quieter, healthier, greener alternatives to gas leaf blowers are now easily available, cost-efficient, and effective — even for commercial use.

## Extreme noise creates public health risks and disrupts work and learning

Typical gas leaf blowers used in Montclair produce sound that exceeds 100 “A-weighted” decibels (dBA) at the operator’s ear and registers around 80 dBA at a distance of 50 feet.<sup>2</sup> Exposure at these levels can cause **hearing loss** in a short period of time, and damage increases steadily with repeated exposure.<sup>3</sup> Operating more than one machine at once, using them on hard surfaces, and using them in enclosed spaces like courtyards all increase the sound intensity and the associated risks.

Noise from gas leaf blowers **travels unusually far** and easily penetrates walls and windows, due to a strong low-frequency component.<sup>4</sup> A typical crew operating multiple pieces of equipment generates enough noise to exceed the EPA community standard of 55 dBA for 800 feet in all directions, affecting hundreds of residents at a time.<sup>5</sup>

**Disruptive effects on concentration, work productivity, and ability to learn** are common even beyond this zone.<sup>3</sup> In addition, chronic exposure to high noise levels is associated with a variety of non-auditory health problems, including cardiovascular disease, obesity, diabetes, reproductive issues, and mental health disorders.<sup>3</sup>

**Children are especially vulnerable** to high levels of environmental noise, which can affect language acquisition, reading comprehension, and cognitive development.<sup>6</sup> WHO guidelines recommend that background noise for children be limited to 35 dBA in classroom settings and 55 dBA in outdoor settings.<sup>7</sup> The noise of a single gas-powered leaf blower exceeds even the higher outdoor limit from hundreds of feet away.<sup>6</sup>

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<sup>1</sup> California Air Resources Board, [Small Engines in California Fact Sheet](#) (2017).

<sup>2</sup> [“Best Backpack Blower Shootout,”](#) *OPE Reviews*, Dec. 15, 2019.

<sup>3</sup> Daniel Fink, [“Ambient Noise Is ‘The New Secondhand Smoke,’”](#) *Acoustics Today* 15, no. 3 (Fall 2019).

<sup>4</sup> [“Gas Leaf Blowers’ Low Frequency Sounds Explains Broad Impact,”](#) *Quiet Communities*, Dec. 15, 2017.

<sup>5</sup> Erica Walker and Jamie L. Banks, [“Characteristics of Lawn and Garden Equipment Sound: A Community Pilot Study,”](#) *Journal of Environmental and Toxicological Studies* 1, no. 1 (2017).

<sup>6</sup> Erica Walker and Jamie Banks, [“Gas-Powered Leaf Blower Sound and Impact on Children”](#) (presentation at the Children’s Environmental Health Network Research Conference, Arlington, VA, Apr. 5-7, 2017).

<sup>7</sup> World Health Organization, [“Guidelines for Community Noise,”](#) ed. Birgitta Berglund et al. (1999).

## Gas leaf blowers emit toxic pollutants at alarming levels

Most gas leaf blowers feature cheap, extremely inefficient two-stroke engines that run on a mixture of gasoline and oil and only burn 70% of it — the remaining 30% being expelled directly into our neighborhoods as aerosol exhaust. Much dirtier than cars, they emit high levels of **ozone-forming and cancer-causing compounds**, including volatile organic compounds (VOCs) such as benzene and formaldehyde; nitrogen oxides (NO<sub>x</sub>); carbon monoxide (CO); and fine particulate matter (PM<sub>2.5</sub>).<sup>8</sup>

These pollutants are **well-known causes of many serious health problems**,<sup>9</sup> including respiratory symptoms and decreased lung function;<sup>10</sup> lung cancer;<sup>11</sup> heart attack, heart failure, and stroke;<sup>12</sup> preterm birth, low birth weight, birth defects, and asthma severity in children;<sup>13</sup> and premature death.<sup>10</sup> A nationwide study by researchers at the Harvard School of Public Health showed a clear link between long-term exposure to fine particulate matter and **elevated death rates from COVID-19**.<sup>14</sup>

## Quieter, healthier, greener alternatives are readily available

For small and medium-sized jobs, manual tools like rakes and brooms are readily available and effective. For larger jobs, **rapid advances in battery technology** have revolutionized the lawn and garden industry in recent years. Virtually all the leading manufacturers now offer commercial-grade battery-electric tools that compete very strongly with their gas counterparts on power, longevity, and price — at a **fraction of the operating costs**.<sup>15</sup> As a result, landscapers adopting these tools can realize positive returns on investment quickly. Battery tools are much quieter than gas, their sound dissipates at much shorter distances, and they generate no engine emissions.<sup>16</sup>

Moreover, **mulching fallen leaves and grass clippings**, rather than removing them, offers clear benefits for the health of lawns, gardens, insects, birds, and other wildlife.<sup>17</sup>

**Please visit [www.quietmontclair.org](http://www.quietmontclair.org) to read more and support our effort to strengthen regulation and reduce the use of gas leaf blowers in Montclair.**

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<sup>8</sup> Jamie L. Banks and Robert McConnell, “[National Emissions from Lawn and Garden Equipment](#)” (presented at the International Emissions Inventory Conference, San Diego, CA, April 13-16, 2015).

<sup>9</sup> Environmental Protection Agency, [Particulate Matter \(PM\) Pollution](#) (website).

<sup>10</sup> Environmental Protection Agency, [Ozone and Your Patients’ Health](#) (website).

<sup>11</sup> Miranda M. Loh et al., “[Ranking Cancer Risks of Organic Hazardous Air Pollutants in the United States](#),” *Environmental Health Perspectives* 115, no. 8 (2007).

<sup>12</sup> American Heart Association, “[Fact Sheet: Air Pollution and Cardiovascular Disease](#)” (2014).

<sup>13</sup> American Lung Association, [Particle Pollution](#) (website).

<sup>14</sup> Lisa Friedman, “[New Research Links Air Pollution to Higher Coronavirus Death Rates](#),” *New York Times*, April 7, 2020.

<sup>15</sup> Danielle Pesta, “[Charged Up: The Future of Battery-Powered Equipment](#),” *Landscape Management*, Dec. 23, 2019.

<sup>16</sup> Chris Pollock et al., “[Lawn and Garden Equipment Sound: A Comparison of Gas and Battery Electric Equipment](#),” *Journal of Environmental and Toxicological Studies* 2, no. 2 (2018).

<sup>17</sup> [Leave Leaves Alone](#) (website); MSU Extension, “[Mulch Leaves Into Turf for a Smart Lawn](#)” (2013).