



**SIERRA CLUB**  
LOMA PRIETA

*Sierra Club Loma Prieta Chapter*  
*Serving San Mateo, Santa Clara and San Benito Counties*  
Protecting Our Planet Since 1933

3921 East Bayshore Road, Suite 204  
Palo Alto, CA 94303

January 30, 2018

Dear Mayor Kim and Belmont City Council Members:

The Sierra Club Loma Prieta Chapter encourages the Belmont City Council to enact legislation banning gas-powered leaf blowers in residential neighborhoods. This action directly supports Belmont's goal of reducing greenhouse gas emissions.

Many communities in the United States recognize the negative health and environmental impacts of leaf blowers and have banned or regulated their use. The Sierra Club Loma Prieta Chapter considers gas-powered leaf blowers to be incredibly dangerous to our health and to the climate. The California Air Resources Board states, "*For the best-selling commercial leaf blower, one hour of operation emits smog-forming pollution comparable to driving a 2016 Toyota Camry about 1100 miles, or approximately the distance from Los Angeles to Denver... In the early 2020s, however, total smog-forming emissions from small engines are projected to exceed those from passenger cars...*"<sup>1</sup>

In California, approximately seventy cities have instituted restrictions.<sup>2</sup> Santa Monica, Manhattan Beach, Hermosa Beach, and Del Mar ban the use of *all* leaf blowers, gas and electric alike. Almost two dozen California towns have banned gas-powered leaf blowers, including Berkeley, Carmel, Los Altos, Santa Barbara, and Sonoma.<sup>3</sup> Palm Springs' ordinance banning gas-powered blowers goes into effect January 2019.<sup>4</sup>

How would a ban or restrictions be likely to affect landscapers and others who use the machines? The City of Santa Monica has banned all leaf blowers since 1991. However, landscaping and landscapers are alive and well in Santa Monica. In fact, they are scientifically much more likely to be well and healthy than if they had been using leaf blowers. That very point is substantiated in extensive scientific literature which details the negative health consequences to those who are subjected to the noise, emissions, and particulates pollution created by leaf blowers.

Regulating leaf blowers is an important step in the right direction for human health, minimizing carbon emissions, and reducing toxic airborne pollutants.

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<sup>1</sup>[https://www.arb.ca.gov/msprog/offroad/sore/sm\\_en\\_fs.pdf](https://www.arb.ca.gov/msprog/offroad/sore/sm_en_fs.pdf)

<sup>2</sup><http://tinyurl.com/ZAPLA-Blower-Ordinances>

<sup>3</sup><http://tinyurl.com/CA-Blower-Ordinances>

<sup>4</sup><http://www.palmspringsca.gov/city-services/sustainability-and-recycling/leaf-blower-ordinance-effective-2019>

## HYDROCARBON EMISSIONS

In 2011 researchers at the car review company Edmunds conducted a study comparing emissions from a two-stroke leaf blower and a 6.2 liter V8, 411 horsepower Ford Raptor half-ton truck. The two-stroke leaf blower produced 23 times the carbon monoxide and nearly 300 times more non-methane hydrocarbons than the crew cab pickup. The study concludes: *“Let's put that in perspective. To equal the hydrocarbon emissions of about a half-hour of yard work with this two-stroke leaf blower, you'd have to drive a Raptor for 3,887 miles, or the distance from Northern Texas to Anchorage, Alaska.”*<sup>5</sup>

While leaf blower manufacturers claim reduced emissions on their newest models, the gas-powered leaf blower remains an emission-intensive technology. The Environmental Protection Agency estimates that gasoline-powered lawn and garden equipment, including leaf blowers, emitted approximately 20.4 million tons of carbon dioxide in 2011.<sup>6</sup> Others estimate the CO<sub>2</sub> emissions from leaf blowers alone to be 18 million tons or more per year.<sup>7</sup>

A more immediate hazard to local residents is the fact that emissions include substantial levels of carbon monoxide, ozone, and carcinogenic substances including benzene, formaldehyde, acetaldehyde, and 1,3-butadiene that pass through the machines as unburned fuel.<sup>8</sup> These chemicals are on the Group 1 *carcinogenic to humans* list produced by the World Health Organization's International Agency for Research on Cancer.<sup>9</sup>

## PARTICULATES, TOXINS AND CARCINOGENS

Pollution generated by leaf blowers is not limited to direct emissions. All leaf blowers, whether gas powered or electric, remain highly pollutive due to the toxic substances they project, disperse and cause to be airborne. The machines kick up a powerful stew of toxins including brake dust, rubber tire particles, pesticides, herbicides, fecal matter, molds, diesel soot, and a long list of carcinogens that are directly inhaled by people within a substantial radius (and of course by the operators themselves).

The potentially deadly health impacts of particulate pollution in paved urban environments<sup>10</sup> are dramatically increased when particulates are stirred up by the hurricane-force winds that leaf blowers emit. It is also important to note that the damaging effects are especially acute for pregnant women and their fetuses, infants, children, the elderly, and for anyone with an existing respiratory, cardiovascular, or other health condition that makes them vulnerable. One study showed that exposure to fine particulates during pregnancy increases the risk of childhood autism.<sup>11</sup>

In sum, it is not merely high emissions that make leaf blowers an exceptionally pollutive technology. It is the volume and variety of pollutants that they project, disperse and force on

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<sup>5</sup><http://tinyurl.com/Edmunds-Emissions-Test>

<sup>6</sup><https://www.epa.gov/sites/production/files/2015-09/documents/banks.pdf>

<sup>7</sup><http://cleanair.trilithon.com/download/Clean.Air.California.pdf>

<sup>8</sup><http://tinyurl.com/ARB-Leaf-Blower-Impacts>

<sup>9</sup><http://monographs.iarc.fr/ENG/Classification/ClassificationsAlphaOrder.pdf>

<sup>10</sup><http://www.news.gatech.edu/2017/08/25/brake-dust-may-cause-more-problems-blackened-wheel-covers>

<sup>11</sup><https://ehp.niehs.nih.gov/1408133/>

the human respiratory system.

## **NOISE**

*“Calling noise a nuisance is like calling smog an inconvenience. Noise must be considered a hazard to the health of people everywhere.”* – Former United States Surgeon General William H. Stewart

Noise is not a “nuisance.” It is a real and significant human health threat. The factors that make noise damaging include not only volume (decibel levels), but also intensity, variability, and frequencies that sharply pierce the sound spectrum of background or ambient noise. The impacts of daytime noise are especially damaging to children, the elderly, the ill, and night shift workers, but may be experienced by virtually anyone in the community.

Damage caused by noise may be classified as physiological, psychological, practical, and social.<sup>12</sup>

The physiological damage caused by noise includes:

- Overstimulation of the autonomic nervous system inducing secretion of stress hormones such as cortisol, adrenaline and noradrenaline
- Increased heart rate, blood pressure, vasoconstriction, potential cardiovascular disease
- Exacerbation of underlying physical illnesses where such illnesses exist

The psychological and practical damage caused by noise includes:

- Impaired cognition and task performance, especially affecting children's learning
- Impaired judgment
- Reduced productivity
- Exacerbation of existing mental illness where such illness exists

The social damage caused by noise includes:

- Increased aggression, interpersonal conflict, and potential violence
- Decreased helping behavior

In sum, *“The potential health effects of noise pollution are numerous, pervasive, persistent, and medically and socially significant.”*<sup>13</sup> (Southern Medical Journal Volume 100: March 2007). Noise pollution is real pollution, and public policy must seek to address it to protect the health and safety of residents. Even if we wore earplugs and noise cancelling headphones all day, they still would not block out the level of sound emitted by leaf blowers.

## **CONCLUSION**

We believe elected officials are entrusted to help protect the health and safety of those they represent. We also believe they are especially entrusted to protect the most vulnerable,

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<sup>12</sup><http://tinyurl.com/British-Medical-Bulletin-Noise>

<sup>13</sup><https://sma.org/southern-medical-journal/article/noise-pollution-a-modern-plague/>

which in this case includes children, the elderly, and the ill.

We urge the city council to pass a leaf blower ordinance. Adding such an ordinance to Belmont's existing green policies and its Climate Action Plan would be a good model for other municipalities that would like to expand their green initiatives.

Sincerely,



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Executive Committee Member, Loma Prieta Chapter of Sierra Club



Gladwyn d'Souza  
Belmont resident  
Chair, San Carlos/Belmont group of the Loma Prieta Chapter of Sierra Club



Carol Wilhelmy  
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