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Board of Supervisors, County of Santa Cruz
701 Ocean Street, Room 500
Santa Cruz, CA 95060

Re: Gas-Powered Leaf Blower Ban

Dear Supervisors,

On October 9, 2021, Governor Newsom signed into law Assembly Bill 1346, banning the sales of off-road vehicles with highly polluting two-stroke engines. The ban includes the sale of gas-powered tools used in landscape maintenance. The Sierra Club lauds the passage of the bill, but because it bans only future sales, it does not affect the continued use of gas-powered equipment in the County. This letter focuses on what the County's constituents have described as the most irritating of all the landscape equipment in use—the gas-powered leaf blower. These concerns are justifiable. While more than 70 municipalities in California have banned these leaf blowers based on noise alone, the environmental pollution they create is also a concern. The Sierra Club would like to see the blowers in current use replaced by electric and electric-battery models as we explain in this letter. This action directly supports the City'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. This includes the recent passage of AB 1346. The Sierra Club Santa Cruz Group considers gas-powered leaf blowers to be dangerous to our health and to the climate. The California Air Resources Board states, "*For the best-selling commercial (gas-powered) 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...*"¹

In California, approximately seventy cities have instituted restrictions.² 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.³ Palm Springs' ordinance banning gas-powered blowers went into effect January 2019.⁴

1. https://www.arb.ca.gov/msprog/offroad/sore/sm_en_fs.pdf

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

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

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

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

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.*”⁵

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 2011.⁶ Others estimate the CO₂ emissions from leaf blowers alone to be 18 million tons or more per year.⁷

A more immediate hazard to local residents is 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.⁸ These chemicals are on the Group 1 *carcinogenic to humans* list produced by the World Health Organization’s International Agency for Research on Cancer.⁹

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 potent mix 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 environments¹⁰ are dramatically increased when particulates are stirred up by the hurricane-force winds that leaf blowers emit.

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 the human respiratory system.

The higher the velocity and total volume of the air coming out of the nozzle of the machine, *irrespective of engine type*, the greater the volume of toxic, vagrant dust containing pollutants. To reduce vagrant dust we would recommend that any electric and electric-battery blowers permitted for use have ratings of discharge air volumes no greater than commensurate with the environment in which they are being utilized, especially in residential areas. Because both velocity and volume can differ greatly in both gas and electric and electric-battery blowers, it is recommended that you, in

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

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

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

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

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

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

conjunction with parks and maintenance departments, conduct demonstrations and testing programs to determine appropriate guidelines for new blowers, i.e. ones for commercial use and others for residential applications. We also agree with the Citizens for a Healthy And Safe Environment (CHASE) that in some situations rakes and brooms are the most appropriate tools to use, and not blowers of any kind (see RECOMMENDATIONS below).

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.¹¹

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.”*¹² 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.

RECOMMENDATIONS

In closing, it should be remembered that your governing body is requesting its citizenry/employees to turn in gas-powered tools that were legally manufactured, sold and purchased. In order to provide a responsible and fair process for the exchange of gas-powered for electric-battery equipment, and to make the most environmentally responsible process for the exchange, we request that you take the following actions:

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

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

1. Demonstrations, Training and Education. To best convert from more noisy and polluting machines to quieter and less polluting ones, guidance and training should be part of the exchange process. Because even battery-operated blowers have higher and lower power settings and air volumes produced, it is critical that citizenry, employees and professionals be shown different options—especially issues related to battery life—prior to purchase. Training, demonstration and education programs can be created by reaching out to equipment manufacturers, distributors, landscape maintenance professional organizations and local environmental groups, e.g. Citizens for a Healthy And Safe Environment (CHASE), an organization that advocates for the use of brooms and rakes in lieu of any form of blower.

2. Rebates on New Equipment. A number of air quality management organizations and electric purveyors are, in conjunction with equipment manufacturers, offering rebates towards the purchase of electric-battery equipment.

3. Recycling of Disused Gas-Powered Equipment. One of the greatest problems in an already challenging process is the effective and environmentally-correct recycling of the equipment. Currently, because they contain non-recyclable plastic parts, *disused equipment will be thrown into the landfill*, despite the recycling value of the metal components. If rebates do not become an option for the exchange of equipment, perhaps a recycling fee similar to fees for recycling automobile oil, batteries and tires, supported by the manufacturers, could provide an opportunity to pay for training programs to separate and legally dispose of plastic parts while enabling the effective environmental benefit of recycling of metal components.

Elected officials and municipal park departments 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, including children, the elderly, and those with health issues.

Finally, we urge the County Board of Supervisors to pass a gas-powered leaf blower ordinance, changing its current maintenance policies for equipment that is currently in use. Adopting such an ordinance, changing maintenance procedures and updating Climate Action Plans are not only imperative to address the climate crisis and human health, but also would provide a model for other municipalities to expand their green initiatives. And because of its commitment to environmental quality here in the Monterey Bay region, and beyond, the Santa Cruz Group of the Sierra Club is offering its support in making this critically important change.

Sincerely,



Steve McGuirk

Conservation Committee member, Sierra Club, Santa Cruz Group



Mike Guth

Executive Committee Chair, Sierra Club, Santa Cruz Group