

How to Talk about Gas-Powered Leaf Blowers

Quiet Clean San Mateo - September 2024

Know the Facts

1. Public Health Harms
2. Environmental Harms
3. Benefits to Landscaping Businesses
4. Ban Enforcement via Citizen Affidavits

Prioritize

The public health harms are the most compelling arguments for a gas-powered leaf blower ban. The harms to landscaping employees are the most important! Center those facts in your conversations with others, followed by the harms to the planet.

It's Not Just About Facts

While knowing the facts motivates many of us to change, that does not work for everyone. Our worldviews are influenced by many factors. If new information does not fit their sense reality, people will often let it go or even forcefully reject it. In addition, information solely about harms can cause someone to shut down. The problem may seem too great or that its harms are inevitable.

Rather than simply asking people to absorb terrible facts, invite people to imagine a world without gas-powered leaf blowers. Imagine a quieter, cleaner, safer community that respects everyone's needs and rights, especially the landscaping employees who use these tools every day.

Key Resources

Quiet Clean San Mateo website: quietcleansanmateo.org

California Air Resources Board SOAR Fact Sheet

City of Oakland Chapter 8.64

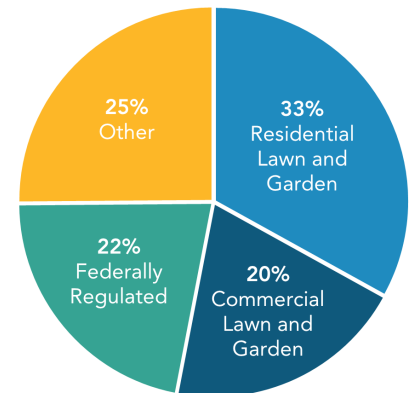
Supervisor Myrna Melgar Press Release

Source: Let This Radicalize You, Kelly Hayes and Mariame Kaba, Haymarket Books, 2023

Small off-road engines in California

Small off-road engines (SORE) are spark-ignition engines rated at or below 19 kilowatts. Engines in this category are primarily used for lawn, garden, and other small off-road equipment. The population of SORE in California (15.4 million) is similar to that of light-duty passenger cars (14.0 million). As of 2021, 61% of California SORE are used in residential lawn and garden equipment, 8% in commercial lawn and garden equipment, 11% in federally regulated construction and farming equipment, and 20% in other equipment types (e.g., generators, pressure washers). While commercial lawn and garden equipment are only 8% of the SORE population, they account for 20% of smog-forming emissions from SORE during the summer.

SORE Emissions by Type (Summer)



1 hr lawn mower use



driving 300 miles
from LA to Vegas

Emissions are significant

Today, operating a commercial lawn mower for one hour emits as much smog-forming pollution as driving a new light-duty passenger car about 300 miles – about the distance from Los Angeles to Las Vegas, more than 4 hours of drive time. For a commercial leaf blower, one hour of operation emits smog-forming pollution comparable to driving a new light-duty passenger car about 1100 miles – about the distance from Los Angeles to Denver, over 15 hours of driving.



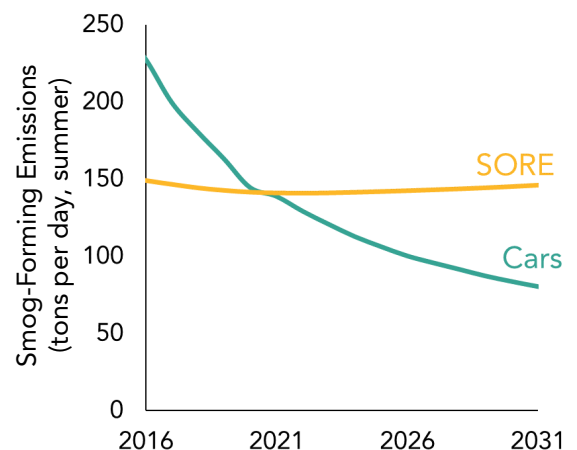
1 hr leaf blower use



driving 1100 miles
from LA to Denver

The need for additional controls

The California Air Resources Board (CARB) adopted emissions standards for SORE in 1990 and was the first agency in the world to control emissions from these engines. Due to the regulations put in place by CARB, SORE are 40-80% cleaner today than they were before the program began. However, total smog-forming emissions from SORE already exceed emissions from light-duty passenger cars in California. SORE emissions are projected to increase as the population grows, while emissions from passenger cars decrease. By 2031, SORE emissions are projected to be nearly twice those from passenger cars.



CARB actions to reduce emissions

Additional emission reductions are needed from SORE to reduce the disproportionate pollution burden on disadvantaged communities. To that end, California Executive Order N-79-20 sets a goal to transition off-road vehicles and equipment operations to 100 percent zero-emission by 2035 where feasible. Emission reductions are also needed to achieve attainment of ambient air quality standards. In 2021, CARB will consider new emission standards for SORE and expanded incentive programs to help California achieve these goals.



CITY ATTORNEY'S OFFICE

OAKLAND CITY COUNCIL
ORDINANCE NO. _____ C.M.S.

AN ORDINANCE ADDING OAKLAND MUNICIPAL CODE CHAPTER 8.64 TO PROHIBIT THE OPERATION OF COMBUSTION ENGINE-POWERED LEAF BLOWERS AND STRING TRIMMERS WITHIN THE TERRITORIAL LIMITS OF THE CITY OF OAKLAND; AND ADOPTING APPROPRIATE CEQA EXEMPTION FINDINGS

WHEREAS, combustion engine leaf blowers and string trimmers most often employ two-stroke engines that require a mixture of gasoline and oil¹. Such engines cause extreme and unreasonable amounts of pollution in several forms²: liquid and solid particulate matter (PM), ozone, carbon monoxide, nitrogen oxides, and hydrocarbons (CO, NOx, and HC). Particulate matter air pollution is of special concern as it consists of particles small enough to remain suspended in the air for hours to days unless removed by precipitation or another force. This pollution compounds the Bay Area's particulate matter levels, which are increasing³; and

WHEREAS, over the course of an hour, a single leaf blower produces as much smog as 17 cars, re-entraining an estimated 2.6 pounds of particulate (PM10) dust emissions per hour of use. Moreover, these machines, along with other motorized handheld equipment, produced more particulate matter emissions than automobile exhaust⁴, according to one study of a group of roadway maintenance workers; and

WHEREAS, global demand for fossil fuels continues to accelerate apace⁵, and is the primary driver of greenhouse gas emissions. To minimize chances of breaching the 2 degree Celsius atmospheric temperature threshold that would produce devastating climatic instability, widespread extinctions and resultant

¹ How Does a Weed Eater Work? <https://homeguides.sfgate.com/weed-eater-work-89639.html>

² LEAF BLOWER FACTS, <https://www.nonoise.org/quietnet/cqs/leafblow.htm>

³ <http://www.lung.org/local-content/california/documents/state-of-the-air/2017/sota-2017-statewide-press-english.pdf>

⁴ Particulate matter emissions: Trimmers and chainsaws are worse than highway traffic, <https://www.sciencedaily.com/releases/2013/05/130530094627.htm>

⁵ Fossil fuels still dominate U.S. energy consumption despite recent market share decline, <https://www.eia.gov/todayinenergy/detail.php?id=26912>

biodiversity loss, social unrest, and heightened conflict, scientific evidence demonstrates that wealthy countries must reduce total greenhouse gas emissions (GHGs) by at least 10% per year⁶. Therefore, all efforts to curb unnecessary fossil fuel combustion are warranted; and

WHEREAS, entrained dust harbors numerous toxins, namely molds, pollens, heavy metals such as lead, arsenic, and mercury, as well as pesticides, animal feces, and viruses. Both blower operators and passersby are exposed to this pollution, although entrained dust is significantly less pollutive compared to combustion engine exhaust; and

WHEREAS, before the COVID-19 pandemic, the United States was already undergoing a massive epidemic of chronic, non-communicable, and mostly preventable diseases⁷, one major cause of which is air pollution⁸. Air pollution irritates eyes and throats, harms lungs, and causes cancer⁹, neurological conditions, and premature death, including sudden death from heart attacks. Because combustion engine-powered leaf blowers contribute to local air pollution, they increase the toxic burden on humans, lowering health outcomes and quality of life. Every year, 200,000 people in the United States die prematurely from air pollution¹⁰; and

WHEREAS, according to a new nationwide study from Harvard T.H. Chan School of Public Health that looked at the link between long-term exposure to fine particulate air pollution (PM2.5) and the risk of death from COVID-19, determined that people with COVID-19 who live in U.S. regions with high levels of air pollution are more likely to die from the disease than people who live in less polluted areas¹¹; and

WHEREAS, the California Air Resources Board reports that air pollution costs the state billions of dollars per year¹² in health care and damage to crops and buildings. Several common air pollutants produced by fossil fuel combustion damage agricultural plants, causing mottled foliage, burning at leaf tips or margins, twig dieback, stunted growth, premature leaf drop, delayed maturity, abortion or early drop of blossoms, and reduced yield or quality. Ozone, sulphur dioxide, nitrogen oxides, ammonia, peroxyacetal nitrate (PAN), chlorine, and ethylene stand out among the most harmful air pollutants. Acidic pollutants deposit on soils, lowering their pH, impeding their ability to incubate food, and rendering them infertile. Acid rain, comprised of the common

⁶ The why and how of radical emissions reductions, Kevin Anderson, <http://www.climatecodered.org/2014/01/radical-emissions-reductions-1-kevin.html>

⁷ Air pollution and chronic airway diseases: what should people know and do? <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4740163/>

⁸ Children's environmental health, Air Pollution, <https://www.who.int/ceh/risks/cehair/en/>

⁹ National Emissions from Lawn and Garden Equipment, <https://www.epa.gov/sites/production/files/2015-09/documents/banks.pdf>

¹⁰ Study: Air pollution causes 200,000 early deaths each year in the U.S., <http://news.mit.edu/2013/study-air-pollution-causes-200000-early-deaths-each-year-in-the-us-0829>

¹¹ Air pollution linked with higher COVID-19 death rates <https://www.hsph.harvard.edu/news/hsph-in-the-news/air-pollution-linked-with-higher-covid-19-death-rates/>

¹² What would you like to know about California's Air Quality?, <https://www.arb.ca.gov/adam/aqfaq/index.html>

pollutants sulphur dioxide and nitrogen dioxide, is the chief cause of corrosive damage to the built environment¹³; and

WHEREAS, in addition to air pollution, noise pollution is widespread in cities, posing several health hazards. Combustion-engine powered leaf blowers emit noise pollution in levels known to cause many negative health effects¹⁴, including stress¹⁵, cardiovascular problems, gastrointestinal distress, depressed immunity, and interrupted sleep¹⁶; and

WHEREAS, the comfortable hearing range for human beings is 0-90 dB. According to the Occupational Safety and Health Administration (OSHA), blowers measuring 70-75 decibels (dB) at 50 feet can attain 90-100 dB volume at the operator's ear, exceeding comfort levels for most people. Such high noise levels pose a high risk of ear damage, and hearing losses therefrom contribute to industrial accidents. Because workers are closest to the point of origin of the noise, they are most susceptible to suffering hearing damage. Hearing loss causes severe health effects¹⁷, including increased stress¹⁸, heart disease risk, gastrointestinal problems, impaired enjoyment of music, entertainment, social interaction, and an impaired ability to recognize sounds of danger. By contrast, electric blowers can be significantly less noisy by tens of decibels¹⁹; and

WHEREAS, hazardous effects of air pollutants and noise are particularly harmful to workers operating combustion engine-powered equipment. Exhaust emissions are particularly concentrated at the point of origin²⁰ and noise is the loudest the closer to this equipment a person is. Modern protective equipment is not sufficient to protect workers from those hazards; and

WHEREAS, urban air pollution and noise²¹ not only negatively impact humans, but also flora and fauna, both on land and in water, through photochemical oxidants,

¹³ Detrimental effect of Air pollution, Corrosion on Building

Materials and Historical Structures, [http://ajer.org/papers/v3\(3\)/ZT33359364.pdf](http://ajer.org/papers/v3(3)/ZT33359364.pdf)

¹⁴ Auditory and non-auditory effects of noise on health, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3988259/>

¹⁵ Too Loud! For Too Long! Loud noises damage hearing, <https://www.cdc.gov/vitalsigns/pdf/2017-02-vitalsigns.pdf>

¹⁶ Numerical list of EHCs, https://www.who.int/ipcs/publications/ehc/ehc_numerical/en/

¹⁷ Chronic noise exposure, high-frequency hearing loss, and hypertension among automotive assembly workers, <https://pubmed.ncbi.nlm.nih.gov/2401922/>

¹⁸ The Covariance between Air Pollution Annoyance and Noise Annoyance, and Its Relationship with Health-Related Quality of Life, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4997478/>

¹⁹ LEAF BLOWER FACTS, <https://www.nonoise.org/quietnet/cqs/leafblow.htm>

²⁰ Carbon Monoxide Hazards from Small Gasoline Powered Engines, <https://www.cdc.gov/niosh/topics/co/>

²¹ Effects of Air Pollution and Acid Rain on Fish, Wildlife, and Their Habitats: Urban Ecosystems, <https://nepis.epa.gov/Exe/ZyNET.exe/9100UMGS.txt?ZyActionD=ZyDocument&Client=EPA&Index=1981%20Thru%201985&Docs=&Query=&Time=&EndTime=&SearchMethod=1&TocRestrict=n&Toc=&TocEntry=&QField=&QFieldYear=&QFieldMonth=&QFieldDay=&UseQField=&IntQFieldOp=0&ExtQFieldOp=0&XmlQuery=&File=D:\ZYFILES\INDEX%20DATA\81THRU85\TXT\0000019\9100UMGS.txt&User=ANONYMOUS&Password=anonymous&SortMethod=hj-&MaximumDocuments=1&FuzzyDegree=0&ImageQuality=r75g8/r75g8/x150y150g16/i425&Display=hpfr&DefSe>

atmospheric metals, acidifying air pollutants, and miscellaneous urban air pollutants. Airborne pollutants can inhibit plant photosynthesis and bioaccumulate in plant and animal tissues. A well-known example of this is the widespread, global build-up of fossil fuel-sourced mercury in fish, rendering them toxic to human consumption; and

WHEREAS, because Oakland is home to several regionally important ecosystems, including the redwood groves of the hills, SF Bay shoreline, wetlands and Lake Merritt, the nation's oldest wildlife sanctuary, it is especially important that urban air pollution be minimized where possible. Curbing the use of fossil fuel-powered leaf blowers and string trimmers in favor of exhaust-free alternatives will further protect local non-human life forms and habitats; and

WHEREAS, many municipalities have already either completely banned or restricted the use of²² combustion engine-powered equipment. Municipalities that have banned combustion engine-powered leaf blowers include the cities of Berkeley, Piedmont, Beverly Hills, Claremont, Laguna Beach, Lawndale, Los Altos, Menlo Park, Santa Monica, and Vancouver, BC; and

WHEREAS, viable alternative technologies exist to replace fossil fuel-powered leaf blowers as well as string trimmers. These include both corded and cordless electric machines, rakes, and brooms. Use of this alternative equipment does not have any negative effect on productivity. For example, one study by the Los Angeles Department of Water and Power found that a grandmother using a rake and push broom outperformed electric leaf blowers and almost matched the performance of gas-powered leaf blowers in the same task²³; and

WHEREAS, the combustion engine-powered leaf blower and string trimmer have a net negative effect on human health and climate mitigation efforts compared with their electric analogs. Their ongoing use is therefore unjustifiable, warranting a citywide ban and replacement with battery-powered machines; and

WHEREAS, the City of Oakland may adopt ordinances for protection of health and safety pursuant to its general police powers, Sect 106 of the Charter of the City of Oakland, and Article XI of California Constitution;

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF OAKLAND DOES ORDAIN AS FOLLOWS:

SECTION 1. Recitals: The City Council finds and determines the foregoing recitals to be true and correct and hereby makes them part of this Ordinance.

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²² Blower Bans Are Working in California Cities, <https://www.nonoise.org/quietnet/cqs/other.htm>

²³ ASSESSMENT AND PERFORMANCE TESTING, Conducted By The Los Angeles Department of Water and Power, Leaf Blower Task Force <https://www.zapla.org/present/dwptest.html>



MYRNA MELGAR

FOR IMMEDIATE RELEASE:

Tuesday, March 1, 2022

Contact: Megan Imperial, (415) 972 – 9792, megan.imperial@sfgov.org

*****PRESS RELEASE*****

**SUPERVISOR MYRNA MELGAR INTRODUCES THE
HEALTHIER, CLEANER, QUIETER COMMUNITIES ACT**

*San Francisco to ban gas-powered yard and landscaping equipment and establish transition fund
to support workers and protect our environment*

SAN FRANCISCO, CA— Supervisor Melgar introduced the “Healthier, Cleaner, Quieter Communities Act” today to prohibit the use of gas-powered landscaping equipment in San Francisco and to support the transition to clean-powered electric equipment. Gas-powered equipment is a major source of pollution that disproportionately affects the health of workers and communities of color. If passed, this legislation would arguably be the strictest and most robust in California and in the nation.

Workers using gas-powered tools are uniquely exposed and suffer lung and heart ailments from constant exposure. This legislation seeks to alleviate the environmental injustice that exposes the mostly immigrant landscaping workforce to disease, and the costs borne by their families and communities. According to the California Air Resources Board (CARB), pollution from using a gas-powered leaf blower for 1 hour equals pollution from driving a car 1,100 miles - the distance from Los Angeles to Denver. The prohibition of gas-powered equipment also aligns with the [City’s Climate Action Plan Goals](#), which identified commitments to phase out sources of pollution, and where possible, replace them with cleaner alternatives. The last seven years have been the hottest on record.

“San Francisco is tackling this issue through an environmental justice lens,” said Supervisor Myrna Melgar of District 7. “Protecting our mainly Latino and Chinese immigrant landscaping workforce is imperative to successfully protect our environment and have a just transition, centering our vulnerable communities in these conversations. I am excited that the Department of Environment will be leading this initiative.”

If passed, the Healthier, Cleaner, Quieter Communities Act would first phase out the use of gas-powered landscaping equipment by the City and its contractors starting on January 1, 2024. The prohibition for the general public would not begin until January 1, 2026. The legislation will also establish a Fund to support the transition to electric-powered alternatives, which will include wholesale purchasing of equipment for City departments, a small engine gas-powered buyback program for landscapers, and support for the disposal of old equipment.

“Ending the use of gas-powered equipment like leaf blowers is about more than carbon emissions. Operating gas-powered equipment impacts the laborers using them all day and

creates a never-ending nuisance for neighborhoods,” said Debbie Raphael, Director of the San Francisco Department of the Environment. “We now have clean, sustainable alternatives. I applaud Supervisor Melgar for approaching this issue with a keen eye on equity and working holistically with City departments and the community to provide the resources necessary to help landscapers and other contractors make the switch.”

Supervisor Connie Chan of District 1 said, "I'm excited to support Supervisor Melgar's legislation to phase out small gas-powered equipment. These types of equipment impact our community and contribute to air and noise pollution. It is time we clean up this pollution on our streets and look to cleaner alternatives."

"Landscapers who use gas-powered machines put their health on the line every day, risking long-term effects to their heart and lungs. This policy takes a step forward towards protecting workers' health, reducing the carbon footprint, and improving the quality of the air we breathe," stated Charlie Sciammas, Community Organizer with People Organizing to Demand Environmental and Economic Justice (PODER) a grassroots organization working to create people-powered solutions facing low-income Latino immigrants and other communities of color in San Francisco.

"Sunrise SF Youth is excited for Supervisor Melgar's Community Act to ban gas-powered small engines. We look to it as the first of many steps we must take, as a society, to combat the damage created by the fossil fuel industry and mitigate the effects of climate change. We look forward to working with Supervisor Melgar and thank her for being a leader in the fight for a healthy future for the youth of San Francisco," said Natalie Greene, the SOTA Sunrise hub coordinator and member of the Sunrise SF Youth leadership team.

“Gas-powered lawn equipment is a huge loophole in our pollution control laws. This legislation is a vital step in fighting climate change,” said John Rizzo, Political Chair, Sierra Club San Francisco Bay Chapter.

“The San Francisco Climate Emergency Coalition (SFCEC) fully supports the Healthier, Cleaner, Quieter Communities Act, which will be a powerful tool to help our city achieve cleaner air and a healthier environment. The Act's focus on helping those workers, small businesses, and communities most affected by polluting gas-powered equipment is key to successful and just environmental action for San Francisco.”

The Department of Environment will annually certify commercially available small-engines that are clean alternatives to dirty polluting gas-powered landscaping and yard equipment. This is a phased-in approach that is meant to ban all small engine gas-powered landscaping equipment to apply market pressure and support the landscaping workforce. For more information or to sign up to support please contact Megan Imperial at Megan.Imperial@sfgov.org.

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