

To: Environmental Quality Commission
From: Commissioner Elkins on Gas Powered Leaf Blowers
Date: Sept. 22, 2021

Recommendation

Recommend to the City Council that it direct city staff to prepare a report regarding a ban on gas powered leaf blowers.

Special note: City council requested this topic be reviewed by the Environmental Quality Commission as a result of public feedback received during the city council's annual work plan process earlier this year. Staff resources have not been appropriated to review/analyze this topic at this time. The city council would review the Environmental Quality Commission's recommendations and provide further direction on next steps to city staff.

Background

Menlo Park residents have increasingly complained to the City Council about the harmful impacts caused by the operation of gasoline-fueled leaf blowers (GLBs) operating in the city. The City Council has directed the Environmental Quality Commission (EQC) to prepare a report and recommendation regarding the continuing operation of GLBs in Menlo Park.

The three concerns repeatedly cited by local residents are (1) noise pollution, (2) air pollution and (3) the effects of each on human health. Our state government has notably committed to address the global climate change crisis by mandating that California reduce its Greenhouse Gas Emissions (GHG) emissions to 40% below 1990 levels by 2030.

<https://www.ca.gov/archive/gov39/2015/04/29/news18938/index.html>.

Governor Newsom’s Executive Order No. N-79-20 of September 23, 2020, has further directed that the California Air Resources Board (CARB) implement strategies to achieve 100% zero emissions from small off-road equipment by 2035, where feasible and cost-effective. Menlo Park itself has set an even bolder goal of becoming carbon neutral (zero emissions) by the year 2030.

This study examines the three concerns above and the extent to which they are addressed - or not addressed - by Menlo Park’s existing regulation of GLB use in Menlo Park Municipal Code Chapter 8.07. The study also examines other public health issues related to GLB operation and use. As discussed below, all of the available evidence strongly indicates that public health in Menlo Park would be best served by phasing out GLBs in favor of battery-powered alternatives. The study concludes by examining methods for how to do so in as equitable a manner as possible.

Noise Pollution and Health

High Decibel Noise

Menlo Park has committed to minimize noise levels within the city “to protect the peace, health and safety of its citizens from unreasonable noises from all sources including, but not limited to, those specified in this chapter.” Menlo Park Municipal Code Chapter 8.07.

In Chapter 8.07, entitled “Leaf Blowers,” the city acknowledges that “[i]t has been found that internal fuel combustion engine leaf blowers cause considerable noise and air pollution and have been the source of numerous complaints by persons working and residing in the city. This chapter is intended to regulate the use of internal fuel combustion engine leaf blowers to minimize noise and air pollution in the city.” To that end, only “certified leaf blowers” may be operated during the permitted hours of 8 am to 5 pm, Monday through Friday. Residents only may operate them on Saturdays from 11 am until 3 pm. Chapter 8.07.020, Section 2 states, “**Certified leaf**

blower” means only those leaf blowers measured at sixty-five (65) dB(a) or less at a distance of fifty feet (50’) by an independent laboratory per American National Standards Institute (‘ANSI’) standard B175.2-1996, as certified by the manufacturer.”

Noise ratings of gas-powered backpack leaf blowers available from typical suppliers indicate that most operate at the ANSI standard. See Leaf Blower Ratings, Consumer Reports Buying Guide (Oct 2019)

<https://www.consumerreports.org/products/leaf-blower/ratings-overview/>.

The reality of urban environments like Menlo Park, where smaller lots are common, is that an operating GLB will frequently be within fifty feet of adjacent residents. When an operating GLB is fewer than fifty feet away, hearing protection is recommended. *Id.* Expecting residents to purchase and don ear protection whenever a GLB is operating nearby is neither reasonable nor practicable, particularly for infants and children.

The existing ordinance consequently does not actually address the noise concerns of city residents. Moreover, enforcing the ordinance is difficult as a practical matter because complaint calls are given low priority by the Police Department, which has many competing public safety concerns. By the time a complaint is made and an officer arrives at the scene, the GLB is usually no longer being used. The ordinance’s intent of protecting the peace and health of Menlo Park residents from GLB noise has not been achieved by the attempt to regulate these blowers.

Low Frequency Noise

The existing ordinance also does not take into account the low frequency nature of GLB noise. A study by the Harvard University School of Public Health shows that low frequency sound travels farther and penetrates walls and buildings more effectively than higher pitched sound. Jamie L Banks, Erica Walker, *Characteristics of Lawn and Garden Equipment Sound: A Community Pilot Study*, Harvard T.H. Chan School of Public Health, <https://sciforschenonline.org/journals/environmental-toxicological-studies/JETS-1-106.php>. The study concluded that a single GLB could

negatively impact up to ninety surrounding homes in typical urban densities versus six homes for a powerful electric blower. Electric engines operate at higher frequencies, explaining why they are significantly less "noisy" than GLBs. This part of the problem is not addressed by an attempt to regulate decibel levels.

Health Impacts of Excessive Noise

The noise that GLBs generate poses a health risk. Prolonged or repeated exposure to sound levels above 85dB (common with backpack style leaf blowers at close proximity) can cause permanent hearing loss. Center for Disease Control and Prevention, "*Too Loud! For Too Long! Loud noises damage hearing*" <https://www.cdc.gov/vitalsigns/hearingloss/index.html>. Multiple studies have found a correlation between exposure to ambient noise over 55dB and a higher incidence of arterial hypertension and cardiovascular diseases due to increased mental stress. Munzel, Gori, Babisch, Basner, *Cardiovascular effects of environmental noise exposure*, European Heart Journal (Apr. 2014) <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3971384/>.

Another study found that people living in areas with more traffic noise were 25% more likely to exhibit symptoms of depression than those living in quieter neighborhoods. Researchers suspect that greater noise aggravates existing health conditions by inducing higher levels of stress. <https://www.brainfacts.org/thinking-sensing-and-behaving/diet-and-lifestyle/2018/noise-pollution-isnt-just-annoying-its-bad-for-your-health-062718>; see also <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4873188/> (depression and anxiety increased with the degree of overall noise annoyance).

Studies have also indicated that noise induced stress can cause the release of cortisol, a hormone that helps to restore homeostasis in the body after a bad experience, and a decrease in dopamine, which controls the flow of information from other parts of the body. "Excess cortisol impairs

function in the prefrontal cortex—an emotional learning center that helps to regulate ‘executive’ functions such as planning, reasoning and impulse control. . . Changes to this region, therefore, may disrupt a person’s capacity to think clearly and to retain information. . . [and] decrease higher brain function, impairing learning and memory.”

<https://www.scientificamerican.com/article/ask-the-brains-background-noise/>. Excessive noise has specifically been shown to negatively impact cognitive development in children.

<https://www.frontiersin.org/articles/10.3389/fpsyg.2013.00578/full>. Aside from issues of physical or mental health, GLB noise can disrupt children’s ability to learn, as well as adults’ ability to work from home.

Air Pollution and Health

What Type of Pollution is Caused by GLBs?

Compared to the transportation and electricity production sectors, GLBs represent a minor source of overall greenhouse gases.

<https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions>.

GLBs are, however, a significant contributor to air pollution.

According to the Environmental Protection Agency, air pollution is any visible or invisible particle or gas found in the air that is not part of the natural composition of air. Ozone (also known as ground-level ozone or O₃), a gas, is a major component of smog and is one of the most common air pollutants. Air pollution may also contain particulate matter (PM), carbon monoxide (CO), and unburned fuel in the form of benzene, formaldehyde, and acetaldehyde.

In addition to pollution from toxic exhaust fumes, gas leaf blowers kick up several particulate matter types in the form of “fugitive dust,” including mold, pollen, animal and bird feces, pesticides, and fertilizers. CARB has stated that leaf blowers are a principal generator of fugitive dust in urban areas.

[http://media.metro.net/projects_studies/sustainability/images/3_Fugitive_Dust_Handbook from CARB.pdf](http://media.metro.net/projects_studies/sustainability/images/3_Fugitive_Dust_Handbook_from_CARB.pdf).¹

The majority of gas-powered leaf blowers in the US use small two-stroke engines (sometimes referred to as small off-road engines, or “SOREs”) that lack an independent lubrication system. The fuel is thus mixed with oil. Approximately 30% of the fuel does not fully combust, resulting in significant emission of toxic pollutants - including carbon monoxide, nitrous oxides, and non-methane hydrocarbons (which together cause smog and acid rain by reacting with sunlight.)

<https://www.sustainability.wustl.edu/rethinking-lawn-equipment-2/>.

A widely cited study conducted at the American Automobile Association's Automotive Research Center and commissioned by Edmunds InsideLine.com, found that a typical two-stroke GLB emits hundreds of times more hydrocarbons than the Ford F-150 Raptor Pickup truck used as a control. "The hydrocarbon emissions from a half-hour of yard work with the two-stroke leaf blower are about the same as a 3,900-mile drive from Texas to Alaska in a Raptor." <https://www.edmunds.com/about/press/leaf-blowers-emissions-dirtier-than-high-performance-pick-up-trucks-says-edmunds-insidelinecom.html>. The EPA has also stated that gas-powered lawn and garden equipment is a prevalent source of high levels of air pollution. <https://www.epa.gov/sites/default/files/2015-09/documents/banks.pdf>.

While manufacturers have made steady reductions in two-stroke engine emissions, they are still one of the largest sources of air pollutants in this country, exceeding even the emissions of large automobiles, which are

¹ Because electric blowers create these same fugitive dust problems (as well as degradation of top soil and harm to beneficial insect habitats), I chose not to get into this factor too extensively. However, there is an argument to be made that all blowers should be restricted in favor of rakes and brooms or, at the very least, that blower use be limited to hardscape only. This is the course taken in Portola Valley. [https://library.municode.com/ca/portola_valley/codes/code_of_ordinances?nodeId=TIT8HESA_CH8.32LEBLUSCHSHGOINEFJA232021#:~:text=It%20is%20unlawful%20to%20use,or%20other%20non%20hard%20scape%20surfaces.&text=%C2%A7%201%2C%202019\)-,8.32.,blowers%20over%20sixty%2Dfive%20decibels](https://library.municode.com/ca/portola_valley/codes/code_of_ordinances?nodeId=TIT8HESA_CH8.32LEBLUSCHSHGOINEFJA232021#:~:text=It%20is%20unlawful%20to%20use,or%20other%20non%20hard%20scape%20surfaces.&text=%C2%A7%201%2C%202019)-,8.32.,blowers%20over%20sixty%2Dfive%20decibels).

regulated to reduce and capture air pollutants via the use of catalytic converters. <https://sustainability.wustl.edu/rethinking-lawn-equipment-2/>. CARB has projected that due to increased adoption of electric vehicle technology and stricter emissions standards for automobiles, along with the increasing numbers of lawn and garden equipment powered by small gasoline engines, total smog forming pollution emissions from small engines will exceed those from passenger cars by 2020. *Small Engine Fact Sheet, California Air Resources Board, July 2018*, https://ww3.arb.ca.gov/msprog/offroad/sm_en_fs.pdf?_ga=2.57772970.1807115685.1562651154%20-1700486834.1557971923. By 2031, CARB states, small engine emissions will be more than twice those from passenger cars. *Ibid.* CARB has recommended a major shift toward electric equipment in order to hit state emissions reduction targets.

Therefore, small actions such as banning the use of GLBs can make a significant difference in improving regional air quality.

Health Impacts of Poor Quality Air

As seen, air pollution like CO, nitrogen dioxide, and hydrocarbons, as well as harmful chemicals, are released when fossil fuels are incompletely burned and enter the atmosphere. Inhaling such pollutants can cause damage that lasts for years, if not for life, and may even lead to death. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7044178/pdf/fpubh-08-00014.pdf>. Those most vulnerable to illness and premature death related to air pollution include children, pregnant women, the elderly, and those with pre-existing heart or lung disease. <https://www.lung.org/clean-air/outdoors/who-is-at-risk> and <https://www.ahajournals.org/doi/10.1161/CIRCULATIONAHA.120.050252>. In studying the health effects of leaf blower created pollution, CARB found that “with exposure to CO, subtle health effects can begin to occur, and exposure to very high levels can result in death.” <https://ww2.arb.ca.gov/sites/default/files/2018-11/Health%20and%20Environmental%20Impacts%20of%20Leaf%20Blowers.pdf>. Symptoms of acute CO poisoning cover a wide range depending on

severity of exposure, from headache, dizziness, weakness, and nausea, to vomiting, disorientation, confusion, collapse, coma, and at very high concentrations, death. At lower doses, central nervous system effects, such as decreases in hand-eye coordination and attention in healthy individuals, have been noted. https://www.cdc.gov/disasters/co_guidance.html. These neurological and cardiovascular effects can be especially serious in children. <https://www.lung.org/clean-air/outdoors/who-is-at-risk/children-and-air-pollution>. Older people are more likely to suffer a heart attack, stroke, atrial fibrillation, and pneumonia because of air pollution. <https://www.nrc.gov/docs/ML1006/ML100601201.pdf> at pg. 97.

Benzene, a component of gasoline, depresses the central nervous system and causes cancer. Acetaldehyde is classified as a Group B2 probable human carcinogen; acute exposure to which causes irritation of the eyes, skin, and respiratory tract. Formaldehyde is highly irritating to eye and respiratory tract tissues, triggering or exacerbating asthma.

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

Studies have confirmed these chemicals' connection to increased cancer risk in gasoline station employees.

<https://www.hoajonline.com/jeees/2050-1323/1/1>. All three are listed as Group 1 known human carcinogens by the American Cancer Society.

<https://www.cancer.org/cancer/cancer-causes/general-info/known-and-probable-human-carcinogens.html>.

It has been firmly established that breathing ozone results in short-term decreases in lung function and damages the cells lining the lungs. It also increases the incidence of asthma-related hospital visits and premature deaths. Confalonieri, U., B. Menne, R. Akhtar, K.L. Ebi, M. Hauengue, R.S. Kovats, B. Revich, and A. Woodward, 2007: Human health. In: Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [Parry, M.L., O.F. Canziani, J.P. Palutikof, P.J. van der Linden, and C.E. Hanson (eds.)]. Cambridge University Press, Cambridge, UK, and New York, pp. 391-431.

“Adverse health effects from the [GLB] emissions are well known. Benzene, 1,3 butadiene, and formaldehyde are listed among the four top ranking cancer-causing compounds. They cause lymphomas, leukemias, and other types of cancer. Ground level ozone and fine PM cause or contribute to early death, heart attack, stroke, congestive heart failure, asthma, chronic obstructive pulmonary disease, and cancer. Growing evidence suggests these pollutants also contribute to developmental and neurological disorders, including autism. The mounting evidence on the dangers of short term exposure is especially concerning.” See <https://www.epa.gov/sites/default/files/2015-09/documents/banks.pdf> and citations therein.

As for fugitive dust pollution, the epidemiological literature demonstrates statistically significant associations between ambient PM levels and negative human health outcomes, including mortality, hospital admissions, respiratory symptoms, and illness.

http://media.metro.net/projects_studies/sustainability/images/3_Fugitive_Dust_Handbook_from_CARB.pdf. Asthma sufferers are particularly sensitive to pollens and other allergens aerosolized by blowers. <https://www.aafa.org/air-pollution-smog-asthma/>.

Two new studies just presented at the Alzheimer's Association International Conference 2021 found that reducing air pollution can reduce the risk of cognitive ailments such as dementia and Alzheimer's. See <https://www.newsweek.com/reducing-air-pollution-could-lower-risk-dementia-alzheimers-1613671?amp=1>. “Breathing in pollutants, especially those that result from the burning of fuel and those so small they are invisible to the naked eye, has been associated with increased risk for a diverse cross-section of diseases, disorders, and other conditions, including but not limited to: mouth cancer, poor bone health and mental illnesses such as bipolar disorder and major depression.” *Ibid.*

As stated by Dr. Mahdieh Danesh Yazdi of the Harvard School of Public Health, “[e]ven if air pollution can’t be fully mitigated, we should strive to do better. Levels of pollutants now considered safe can still have harmful effects and result in bad outcomes.”

<https://www.nytimes.com/2021/06/28/well/live/air-pollution-health.html?referringSource=articleShare>.

Operator Impacts

The health risks associated with lawn and garden equipment are highest for those who operate this equipment continuously.

<https://www.epa.gov/sites/default/files/2015-09/documents/banks.pdf> at pg

12. A study published in *Nature* in 2006 found that emissions from small gas engines “may lead to elevated air pollution exposures for a number of gaseous and particulate compounds, especially for individuals whose occupations require the use of these engines daily, such as landscapers.”

<https://www.nature.com/articles/7500471>. And while workers are exposed to very high levels of pollutants for many hours each day, they are also exposed to very high noise levels that can, as seen, induce permanent hearing loss if proper ear protection is not worn at all times.

Workers are also required to routinely handle gasoline, engine oil, and maintenance chemicals, most often under unsafe conditions.

<https://www.greenindustrypros.com/mowing-maintenance/engines-parts-shop-equipment/article/12228422/gas-can-safety-for-landscapers-and-lawn-care-contractors>

Exposure to gasoline fumes is a health hazard as is skin contact.

<https://wwwn.cdc.gov/TSP/MMG/MMGDetails.aspx?mmgid=465&toxid=8>.

GLBs, particularly those carried on the operator’s back, also cause vibration impacts to the body and hands. Prolonged exposure to vibration can cause injuries known as Hand-Arm Vibration Syndrome.

https://www.researchgate.net/publication/334361296_Vibration_Transmitte

[d to the Hand by Backpack Blowers](#). This condition causes changes in the sensation of the fingers which can lead to permanent numbness of fingers, muscle weakness and, eventually, wasting which can leave a sufferer unable to continue working with power tools.

<https://patient.info/bones-joints-muscles/hand-arm-vibration-syndrome-leaflet>.

Dan Mabe of American Green Zone Alliance (AGZA) has worked with many landscape maintenance professionals while transitioning them to electric tools. He states that workers “love the smoothness of the electric tools – less vibration, they feel less fatigued. And they love the fact they don’t have to work with any gas or oil or solvents. They can go home and not feel like a gas can walking into the house.”

<https://cleantechnica.com/2021/06/19/the-fully-electric-future-of-landscape-maintenance/>.

These operators are typically low wage workers, and often do not have a say in which equipment they use. The continued use of GLBs thus puts additional disproportionately high health risks upon a population who are some of the least able to avoid those risks.

Environmental Damage

Even putting aside issues of the localized poisoning of communities, residents, and workers, GLBs are harming our global environment at a rate that should not be dismissed out of hand simply because other sources are larger culprits. “According to the US Department of Energy, 1.2 billion gallons of gasoline are consumed annually in the US for lawn and garden maintenance, and a significant portion of that is spilled while filling gas tanks. Roughly 25 pounds of CO₂ are emitted per gallon of gasoline burned, which means nearly 15 million tons of CO₂ are emitted per year for lawn maintenance.”

<https://afdc.energy.gov/files/u/publication/lawn equip 2014.pdf>.

But even beyond this, the daily use of GLBs produces thousands of pounds of solid toxic and plastics waste yearly in the form of contaminated air and fuel filters, spark plugs, gaskets, and plastic two cycle oil containers that are sent to landfills. Filling gas tanks and mixing two cycle oil often results in spillage of toxic liquids and residual oil from used containers can find its way into water systems and harm local ecosystems. Common fluids used for engine maintenance – such as carburetor cleaners and engine degreasers - are highly toxic fluids themselves which require care in use and special disposal procedures. www.agza.net

Alternatives to Gas

Fortunately, a clean technology exists that can largely replace GLBs and perform most tasks effectively and efficiently. Consumer Reports says that, for ordinary yards, electric leaf blowers perform comparably to gas-powered models. The New York Times consumer product team also found many electric blowers to be as effective as gas powered models, although corded versions still tend to outperform battery versions.

<https://www.nytimes.com/wirecutter/reviews/best-leafblowers/>. The electric Toro F700, for example, “is light, with an easy one-handed speed control, and it moves leaves with a fury . . . at less than \$60.” *Ibid* “The Ego LB5604 doesn’t have the raw leaf-blasting power of the corded models, but in our tests its more focused airstream was better at getting under a dense mat of wet leaves, and its turbo button can produce an extra burst of power.” *Id*.

According to *Chainsaw Journal*, “cordless [electric] leaf blowers offer all the benefits of gas without any of the weakness. No fumes, no mixing gas and oil, easy to start, and highly maneuverable . . . You can even find professional-grade cordless backpack leaf blowers, such as the DeWalt DCBL590X1, which is powered by a 40V 7.5Ah lithium ion battery pack for increased power and runtime. . . . Some of the backpack cordless models accept dual batteries so they can deliver more blowing power and extended runtime for professional landscaping jobs. The Greenworks cordless 80V

backpack leaf blower is on the higher end of the power spectrum with 580CFM and 145MPH.” <https://www.chainsawjournal.com/electric-vs-gas-leaf-blower/>.

While commercial grade electric blowers may cost more upfront than gas fuel models, manufacturers and green organizations make the case that they more than pay for themselves in gas savings and maintenance cost. In one study by the University of Arkansas, comparing the gas blower then currently in use to maintain the campus to two electric models, they found the electric blower to represent an overall savings - “If you look at the amount of gasoline it takes to fuel the leaf blower over a five-year period . . . you see how quickly the cost of refueling these [gas machines] can be.” https://sustainability.uark.edu/resources/publication-series/project-reports/reports-electric_power_tools_ua-2017-ofs.pdf.

An analysis by California State Senator Josh Becker’s office shows that the cost of a commercial grade electric blower is surpassed by the cost of fueling a comparable gas blower after less than 1000 hours of use. <https://docs.google.com/spreadsheets/d/1JNGM0eW3VsOgFSnPJ5NgiOJHSeXNDsvDsM8Wywzz5us/edit#gid=0>. Assuming a blower is used only 2 hours a day for 50 weeks a year, the electric version has paid for itself in 2 years.

AGZA also states that the savings in switching to electric begins at year two. (AGZA.net Service Pro Workshop)

Moreover, electric tools have a much simpler design, with fewer moving parts and do not need to be cleaned and serviced routinely like a gas machine, representing additional cost savings.

Although the Menlo Park Public Works Department currently believes that electric blowers are not up to the task of maintaining city properties, AGZA has shown that, with proper training and education on best practices, even very large areas can be maintained. In AGZAs model, grounds crews are

encouraged to use gas tools only for jobs that absolutely cannot be handled without the extra power of gas. In such cases it recommends the use of 4-stroke equipment only which is substantially cleaner than 2-stroke. See www.AGZA.net.

Jose Diaz, a landscaping coordinator in Los Angeles who has given testimony against proposed local gas-powered SORE limitation laws, has even acknowledged that electric “leaf blowers work just fine.” <https://californiaglobe.com/section-2/bill-that-would-ban-sales-of-new-small-gas-powered-engine-machines-introduced-in-assembly/>.

Our city’s parks, playgrounds, and public areas, including schools, are some of the places we most want clean air and a quiet background. Our city government should take steps to make this possible even if it involves rethinking the current approach to keeping these areas free of leaves, hazardous materials and debris.

Organizations, Municipalities and Industry are going Electric

At least ninety California municipalities have enacted restrictions on leaf blowers, as outlined in the table below. Most of these towns and cities restrict leaf blower usage by ordinance to certain times of the day, or through their noise regulations. Approximately thirty of these cities have explicit bans on gas-powered leaf blowers, while at least two cities have banned all motorized blowers outright.

California Cities Banning Gas Leaf Blowers (GLB)	Effective date of gas leaf blower ban
Belvedere	1987
Berkeley	1991
Beverly Hills	1976
Carmel	1975
Claremont	1991
Del Mar	Mid 1980s
Encinitas	2019
Hermosa Beach	Early 1990s
Indian Wells	1990
Laguna Beach	1993
Larkspur-Corte Madera	2020

Lawndale	2018 or earlier
Lomita	1986
Los Altos	1991
Los Gatos	2014
Malibu	2019
Manhattan Beach	1998
Mill Valley	1993
Monterey City	2021
Oakland	2021
Ojai (Public Works maintenance zero emissions)	2017
Pacific Grove	2021
Palm Springs	2019
Palo Alto	2005
Piedmont	1990
Portola Valley	2021
Rancho Palos Verdes	2020
Redondo Beach	2018
San Clemente	2021
San Francisco (Recreation and Parks Dept)	Jan. 2023
Santa Barbara City	1997
Santa Monica	2018
Sonoma	2016
South Pasadena (All municipal properties zero emissions, maintained by AGZA)	2016
South Pasadena*	Oct. 2022
West Hollywood	1986

* As reiterated at July 7, 2021 City Council meeting (meeting video available on city website).

Other institutions and organizations that have adopted electric garden equipment include high schools, golf courses, sports complexes, and universities. <https://www.brightview.com/resources/press-release/penn-switches-all-electric-landscaping-equipment-help-brightview>; <https://www.washingtonpost.com/climate-solutions/2021/06/30/electric-lawn-care/>. Yerba Buena High School in San Jose was the nation’s first AGZA Green Zone high school and its grounds department performs all routine landscaping maintenance on over 30 acres of serviceable area with all-electric equipment. <https://agza.net/agza-gz-ybhs-press-release/> Pennsylvania State University, with a campus of nearly 8000 acres, has also recently recognized the benefits of switching from gas to electric landscaping equipment and has found that electric equipment performs as well as gas. <https://www.collegian.psu.edu/news/campus/penn-state-s->

[office-of-physical-plant-seeks-to-prevent-pollution-through-electric-landscaping-equipment/article_4112fcaa-0f80-11ec-812d-67faa2311a21.html?fbclid=IwAR0CVKY8qHkp29oiCzu6GSGeIIWW3uWSxN6kvPG6MYRXIOgqX9AzPlfzJPs.](https://www.arb.ca.gov/sites/default/files/2018-11/Health%20and%20Environmental%20Impacts%20of%20Leaf%20Blowers.pdf)²

CARB last submitted a report on GLBs to the California Legislature in February, 2000. At that time, CARB did not recommend a ban on GLBs due to the landscaper's "need" for such equipment despite its detriments to air quality and public health and because of the lack of acceptable alternative tools. <https://ww2.arb.ca.gov/sites/default/files/2018-11/Health%20and%20Environmental%20Impacts%20of%20Leaf%20Blowers.pdf> at p. 56. At that time electric leaf blowers were limited either to corded models or largely underpowered battery models. But at this point, according to CARB's current website, "[l]eaf blowers have . . . been deemed an ideal candidate for electrification in both the residential and commercial market. *Ibid* "Furthermore, in an effort to reduce the amount of PM that is stirred up by the leaf blowers, alternatives such as leaf vacuums can and should be considered by both the commercial and residential sector." *Id.*

Thus, it is only a matter of time before GLBs are banned statewide and Menlo Park should take the lead by demonstrating a commitment to electrification in all ways large and small.³

State Action will not Adequately Address Citizen Concerns

California State Assemblymember Marc Berman, D-Menlo Park, in response to CARBs statements (above), submitted legislation (AB 1346)

² The landscaping crews at Penn State still use GLBs in the fall months when electric blowers are not powerful enough for specific tasks.

³ It might behoove the city to think ahead to the time when GLBs will simply be unavailable and only electric blowers will be used – are we going to be satisfied to have them operated such that they continue to harm habitat for beneficial insects, destroy topsoil, and create fugitive dust and associated PM? If we are going to legislate now, perhaps we should consider an ordinance that restricts blower use to hardscape, and directs that dust and other debris shall not be deposited onto a neighboring property or into a street, gutter, or storm drain, (while, of course, continuing to restrict hours of use and db levels). For an example of such an ordinance see https://encinitas.granicus.com/MetaViewer.php?view_id=7&clip_id=1968&meta_id=101104.

that would require new sales of SOREs to be zero-emission by 2024 or whenever CARB determines is feasible, whichever is later. The bill also requires CARB to make funding available for commercial rebates to support the transition to zero-emission SORE. <https://a24.asmdc.org/press-releases/20210329-berman-and-gonzalez-bill-will-phase-out-gas-powered-small-engines>. This bill has now passed both houses of the California Legislature and currently awaits Governor Newsom's signature. <https://www.sacbee.com/news/politics-government/capitol-alert/article254086403.html><https://www.sacbee.com/news/politics-government/capitol-alert/article254086403.html>

While this law will finally begin to address the dangers and nuisance of gas-powered leaf blowers, the fact is that its impact will not actually be felt for many years. It only bans the sale of GLBs within California and does nothing to prevent the operation of equipment purchased before December 31, 2023, nor any equipment bought out of state. This could potentially leave GLBs operating within the state for years to come.⁴ If the City Council wants to address the concerns of Menlo Park residents over the noise and pollution effects of GLBs in our neighborhoods well past 2030, they need to take steps now to educate residents and workers of the dangers associated with operating and living near GLBs.

On the positive side, the law will provide \$30 million in funding to provide incentives to persuade users to switch from gas equipment to zero emission electric equipment. While it is yet to be decided if these funds will be directed towards local municipalities or whether a statewide program will be created, there will be money available to gardeners who go electric.

Implementing a Ban Equitably

⁴ As noted by landscaper Jose Diaz, "you can buy a gas-powered version in Mexico or Arizona or some place out of state and it's not illegal to bring it in. If you can do that, or with the way we're moving to online shopping, just order a gas-powered lawnmower [or blower] from out of state without consequence, what is the point of this?" <https://californiaglobe.com/section-2/bill-that-would-ban-sales-of-new-small-gas-powered-engine-machines-introduced-in-assembly/>.

Electric is actually cheaper than gas in the long run. Thus the only financial hardship to professional users would be the upfront cost. If AB1346 is signed by the governor, it will require CARB to make funding available for commercial rebates to support the transition to zero-emission SORE.

<https://a24.asmdc.org/press-releases/20210329-berman-and-gonzalez-bill-will-phase-out-gas-powered-small-engines>.

In Encinitas, \$10,000 was set aside to provide incentives to local professionals to turn in their gas machines. The city staff estimated this could provide up to 50 rebates.

https://encinitas.granicus.com/MetaViewer.php?view_id=7&clip_id=1968&meta_id=101104. Portola Valley was also able to fund a buyback program, allotting \$6000. <https://www.almanacnews.com/news/2019/11/26/portola-valley-town-to-buy-back-leaf-blowers-add-church-to-housing-program>. If Menlo Park is committed to clean and healthy air and the protection of low income workers, it could similarly fund such a program if regional or statewide incentive programs cannot be found.

A phase-in period can also alleviate financial burdens by allowing owners of non-compliant equipment the time to prepare for a switch to clean technology. The California Landscape Contractors Association agrees “that efforts to prohibit outmoded equipment should be accompanied by buy-back programs that permanently remove the equipment from service. At a minimum, bans on outmoded equipment should go into effect at least one year after a decision is made. This would give users crucial lead time to phase out their non-compliant equipment.” <https://www.clca.org/advocacy-2/current-issues/leaf-blowers/>.

A robust campaign that would educate property owners and commercial users about all the issues involved, from human health, to noise pollution, to habitat preservation, and including information about the costs and savings related to an upgrade to electric, could encourage those who employ landscape crews to pay a little extra to make up for increased costs and any lost productivity that is attributed to battery life. Time currently spent blasting leaves out of planting beds and borders could be saved if

property owners can be persuaded that a garden provides beneficial habitats for bugs, birds and other life and does not need to look like a golf course. Homeowners can ask their gardening crews to use blowers only on hardscape. The city could also suggest that property owners themselves could invest in an inexpensive electric blower to be kept available for the workers' use. Portola Valley Councilman John Richards noted that he knew "of several people in town who have stepped up to purchase electric blowers for their gardeners, or have helped finance them," after his city's ban went into effect. https://www.almanacnews.com/news/2021/08/03/portola-valley-quieter-after-gas-powered-leaf-blower-ban?utm_source=express-2021-08-03&utm_medium=email&utm_campaign=express.

South Pasadena is one of the California cities that has most recently approved a ban. They will phase in the law over a one-year period, using that one year to educate residents and landscapers about the dangers of gas blowers. <https://southpasadenan.com/leaf-blower-ban-as-ordinance-takes-effect-city-seeks-to-educate/> The city plans to hold demonstrations of the power and efficiency of electric equipment, partner with AGZA in its outreach campaign, create a webpage dedicated to the ban, distribute information via a city e-newsletter and flyers handed out at farmers markets, city offices and libraries, and publish ads in local newspapers, among other efforts. *Ibid.*

Because workers are the ones most vulnerable to the health impacts of GLBs, helping low income operators to acquire and use cleaner technology should be a goal of this council. The City of San Mateo recently announced a rebate program which provides residents up to \$100 towards the purchase of an electric blower while professional landscapers can receive a rebate of up to \$500. <https://climaterwc.com/2021/08/11/san-mateo-launches-electric-leaf-blower-rebate-program-to-reduce-noise-pollution/>.

Finally, enforcement issues are less important if education is prioritized. Any fines should be preceded by effective education and multiple

documented warnings and the option to fine the employer rather than the worker can be written into any ordinance.

Conclusion

Citizens have made it known that the noise impacts alone are sufficient reason to ban GLBs but the vast evidence shows that routine use of this tool in the vicinity of residential neighborhoods, schools, parks, and other public spaces is exposing the public as well as landscape workers to unnecessary and preventable health risks. Recent racial and socio-economic reckoning makes the need to protect the operators of GLBs more apparent and imperative.

As stated by 350 Bay Area, a local non-profit working to address climate change, “[r]eining in these engines is a climate, health, and environmental justice issue.” <https://350bayareaaction.org/support-ab-1346-and-electrify-landscaping-equipment-for-climate-health-justice/>. And Asm. Berman has stated in connection with AB1346: “[w]e must look beyond transportation if we are to achieve the emissions reductions needed to fight climate change and improve air quality and health in our communities.” <https://a24.asmdc.org/press-releases/20210329-berman-and-gonzalez-bill-will-phase-out-gas-powered-small-engines>.

A recent article in the Almanac on the local efforts to ameliorate the harmful effects of GLBs elicited the following comment from Menlo Oaks resident “Ms Walker:”

“I despair of we [sic] as a society ever doing anything about the climate crisis if we can’t even ban the use of a “gardening” tool that the California Air Resources Board has determined is a major source of air pollution and that has an electric alternative tool already available to use. If we can’t even take this simple step (which would have a beneficial effect on our health), what does it say about our ability to take bold action?”

https://www.almanacnews.com/news/2021/08/03/portola-valley-quieter-after-gas-powered-leaf-blower-ban?utm_source=express-2021-08-03&utm_medium=email&utm_campaign=express.

Equitable solutions can be found to help landscape professionals transition from gas to electric with minimal financial impact. The benefits to the workers themselves, the public at large and the very planet are well worth the resources the city will need to expend to implement a ban.

Recommendation

Environmental Quality Commission recommend that the City Council direct city staff to prepare a report regarding the implementation of a ban on gas-powered leaf blowers in Menlo Park.