



OPTIONS PAPER

TO: Mayor Kent Studebaker
Members of the City Council

FROM: Members of the Sustainability Advisory Board (SAB)

SUBJECT: Options for Addressing Local Air and Noise Pollution from Gas-Powered Landscape Maintenance Equipment

DATE: August 6, 2019

Overview

This paper outlines community concerns and potential solutions relating to gas-powered landscape maintenance equipment (GLME),¹ and is intended as a resource for the City Council, City staff, and community members as they explore options for addressing this issue. It summarizes research and recommendations that have emerged from the Sustainability Advisory Board (SAB) and our efforts to identify ways to protect local air quality, minimize noise impact, and do our part in addressing climate change. There are several potential actions the City Council can consider that would benefit those living in, working in, and visiting Lake Oswego.

SAB encourages the City Council to use and share this document to engage City staff, Neighborhood Associations, HOA's, community members and others (e.g., local landscaping businesses and employees). We welcome feedback, further questions, and the opportunity to help explore these ideas further.

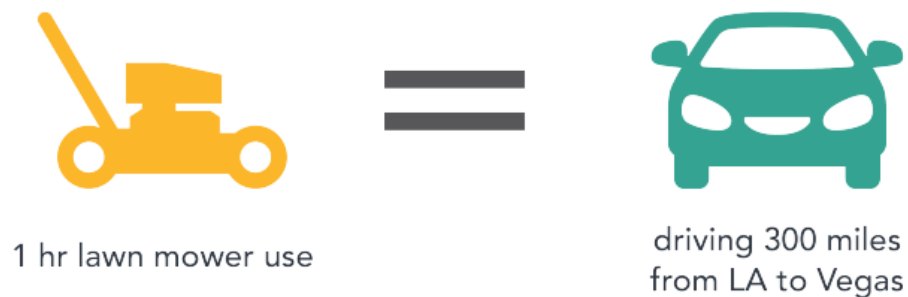
Background

Over the past several years, many community members have expressed concerns related to gas-powered landscape maintenance equipment (e.g., lawnmowers, trimmers and leaf blowers). Lake Oswego citizens have contacted City Councilors with complaints about noise and air pollution. Citizens have also brought their concerns up at Sustainability Advisory Board (SAB) meetings, asking for support and suggested solutions. The topic has also been an active thread on community message boards generating dozens of pages of discussion regarding the noise and air quality impacts of GLME. Many of Lake Oswego's neighborhood associations are interested in seeing Council advance solutions.

¹ Gas-powered landscape maintenance equipment (GLME) includes mowers, leaf blowers, trimmers, edgers, cutters.

Community members have valid concerns. Noise and air pollution are common complaints, as is the exhaust from gas-powered mowers, trimmers, and leaf blowers. Inefficient, outdated landscape maintenance equipment engines can create significant localized air quality hazards. They emit pollutants linked to cardiovascular disease, stroke, respiratory disease, cancer, neurological conditions, premature death, and effects on prenatal development. Older and younger citizens are particularly vulnerable to this type of air pollution. The effects from noise include permanent hearing loss for those within close proximity, and disruption of the quiet necessary for relaxation, recreation and work for those within a very wide perimeter, even within buildings. An EPA study shows prolonged exposure to +85dB which is the decibel level for most gas-powered landscaping equipment can cause hypertension, high stress levels, tinnitus, hearing loss, sleep disturbances, and other harmful effects.

The local air pollutants coming from this equipment are far greater than that of other sources, such as cars and trucks.² Figure 1 shows how pollution from limited use of this equipment is equivalent to hours of driving.³



However, the idea of moving away from gas-powered landscape maintenance

equipment raises other important questions. For example, are the alternatives to gas-powered equipment as effective? Shouldn't homeowners have the choice of how to take care of their yard? What is the cost of switching over to electric/battery powered lawn equipment—and who bears the costs? (See Appendix A for list of frequently asked questions.)

² See, for example: Kavanagh, Jason. "Emissions Test: Car vs. Truck vs. Leaf Blower." December 2011.

<https://www.edmunds.com/car-reviews/features/emissions-test-car-vs-truck-vs-leaf-blower.html>

³ "Small Engine Fact Sheet." California Air Resources Board. https://ww3.arb.ca.gov/msprog/offroad/sm_en_fs.pdf

These questions can be answered and the problem is solvable. Communities throughout the United States are finding ways to preserve local air quality, to minimize noise impacts, and to protect public health. The solutions outlined below take inspiration from those other communities' experiences and suggest ways of adapting them to Lake Oswego's own unique situation. Each alternative deserves consideration and we encourage the City Council to weigh the advantages and disadvantages.

Options to Consider

- ***Electric Landscaping Equipment Technology Demonstration.*** This educational outreach could involve partnering with local groups and manufacturers to show off the latest, affordable electric mowers, leaf blowers, and trimmers. Community members and local businesses would be able to test out various models and get information on the effectiveness and run-time of new electric/battery equipment.

- ***Lawn Equipment Electrification Exchange Program.*** This type of voluntary initiative has been modeled by several communities and appears in the list of recommended Climate Actions for Lake Oswego. Residents and lawn care businesses could trade gas-powered equipment for electric equipment, potentially at a reduced cost. Exchange programs have been highly successful in communities such as those regulated by the South Coast Air Quality Management District (SCAQMD). SCAQMD has scrapped more than 55,000 highly polluting gasoline mowers, removing almost 114 tons of smog-forming pollutants from the Southland's air. Similarly, the district has scrapped more than 10,000 old, polluting leaf blowers.⁴ There may be potential for bulk purchasing of equipment as has been done in other communities, based on demonstrated interest by community members.

- ***Quiet, Clean Neighborhood Pilot Programs.*** Neighborhood-based programs could involve a handful of neighborhoods, partnering with the City, to demonstrate the advantages and challenges involved in electrifying lawn equipment. It could be an "opt in" program where residents and their landscapers pledge to only use electric equipment. The City could prioritize and publicize available neighborhood grants for electrification efforts. Neighborhoods could also opt to pursue "Green Zone" support and/or certification through the American Green Zone Alliance.⁵

⁴ See: South Coast Air Quality Management District. "Electric Lawn and Garden Equipment." <http://www.aqmd.gov/home/programs/community/community-detail?title=lawn-equipment>

⁵ See: American Green Zone Alliance. https://www.nhwnc.net/wp-content/uploads/2018/09/AGZA_flier_half-page_2-sided.pdf

- **Public Procurement Program for Electric Landscaping Equipment.** The City and School District could implement a procurement program, similar to its vehicle fleet purchasing, that prioritizes electric landscaping equipment for use in maintaining parks, open spaces, and school campuses. It could roll out the program as soon as is financially and practically feasible, aiming to demonstrate the technology in its maintenance of certain parks and inviting residents to comment on the improvement in local quality of life.

- **City Code Amendment for Noise Prohibitions.** Lake Oswego currently has no regulations which establish maximum allowable decibel or sound levels.⁶ The City could set a maximum decibel level for landscape maintenance equipment (using similar language to that which provides levels for construction activities) that would encourage use of quieter, cleaner electric equipment, consistent with the Lake Oswego Comprehensive Plan recommendation to “Reduce noise levels in Lake Oswego and maintain the quiet character of the community in which people can converse, relax, play and sleep without interference from noise,” (LO Comp Plan, Goal 6, Section 4 Sound Quality).

- **Gas-Powered Landscape Maintenance Equipment Phaseout.** More than 100 cities have chosen to transition completely away from gas-powered landscape maintenance equipment. They have generally created ordinances to ban or restrict gas-powered landscape maintenance equipment and also transition to electric landscaping equipment for residential and commercial uses. As others have argued, the reasons for a phase out include: ⁷

...the obsolescence of the technology, which is orders of magnitude more polluting than other machines and engines now in common use; the public-health danger, above all to hired work crews, of both the emissions and the damagingly loud noise from the gas blowers; and the rapid advent of battery-powered alternatives, which are quieter and dramatically less polluting.

The City could aim to first phase out the oldest, most polluting equipment, with language such as: “Effective [DATE], the use or operation for commercial purposes of 2-stroke gasoline-powered landscape maintenance equipment (specifically, leaf blowers, trimmers, and mowers) is prohibited within the city limits of the City of Lake Oswego.”

⁶ As per, Lake Oswego’s Comprehensive Plan, Goal 6, Section 4, Sound Quality: http://welovelakeoswego.com/wp-content/uploads/2012/08/Goal_6_4.pdf

⁷ <https://www.theatlantic.com/notes/2019/03/washington-dc-enacts-phase-out-gas-powered-leafblowers/585124/>

Take Action

SAB encourages the City Council and interested community members to watch this 3-minute video that summarizes the issue: <https://www.youtube.com/watch?v=Lf-RxgPTflk>.

Further, SAB suggests Council hold a Study Session as soon as feasible and identify actions that can be taken both in the near-term and longer-term. For instance, a pilot exchange program in 2020 would allow the City to test interest and impact. Meanwhile, a longer-term plan for a staged phase out would give businesses advanced notice and allow them to gradually phase in electric equipment at the time of regular equipment replacement.

We encourage others in the community to support and provide input on such actions. Practical, fair solutions are available. Air and noise pollution from this equipment need not cause any further harm to citizens, or those visiting and working in Lake Oswego.

Thank you for your consideration of our request for City Council to recommend further study of the options available to address noise and air quality impacts from gas-powered landscape maintenance equipment.

Respectfully,

Eliot Metzger, Co-Chair
Paul Soper, Co-Chair
Richard Canaday
Stephanie Glazer
Allison Kim

Bob Sack
Kathleen Wiens
Ella Feathers, Youth
Anna-Marie Guenther, Youth

APPENDIX A: Frequently Asked Questions

What is the issue regarding lawn equipment?

Each weekend, about 54 million Americans mow their lawns, using 800 million gallons of gas per year and producing tons of air pollutants. Gas-powered landscape maintenance equipment engines, which have had unregulated emissions until the late 1990's, emit high levels of carbon monoxide, volatile organic compounds and nitrogen oxides, producing up to 5% of the nation's air pollution and a good deal more in metropolitan areas.

More than 5 million gas-powered mowers are still sold in the U.S. every year. A typical gas-powered mower can emit the same amount of VOCs and NOx -- key precursors to smog -- in an hour as a typical car driven 45 miles, according to the EPA.

The replacement of every 500 gas-powered lawn mowers with non-motorized mowers would spare the air:

- 212 pounds of hydrocarbons (smog ingredient)
- 1.7 pounds of nitrogen oxides (smog ingredient)
- 5.6 pounds of irritating particles
- 1,724 pounds of carbon dioxide

See: <http://www.peoplepoweredmachines.com/faq-environment.htm>

What are the health risks of gas-powered landscape maintenance equipment?

The cumulative health and environmental impacts of gas-powered equipment on crews and the immediate community is staggering, to say nothing of the significant contribution to the climate crisis.

With powerful, quiet electric alternatives readily available and proven in full-time large-scale commercial settings, there are readily available solutions to transitioning away from gas-powered landscape equipment. More information is available online: <https://www.agza.net>

Why is it relevant now?

Until 1995, lawnmower emissions were unregulated. Older more powerful, less efficient two-cycle engines release 25-30% of their oil and gas unburned into the air. Gas-powered lawn mowers emit hydrocarbons and oxides of nitrogen (the principle ingredients of smog), particulate matter (damaging to the respiratory system), carbon monoxide (a poisonous gas) and carbon dioxide (contributing to global warming). The health toll includes cancer as well as damage to lungs, heart, and both the immune and detoxification systems. Additionally, smog inhibits plant growth. Lawnmowers are currently subject to EPA's Phase 2 regulations. These requirements have reduced volatile organic compounds and nitrogen oxides emissions by over 70 percent from unregulated levels. EPA's Phase 3 regulations took effect in 2012 for lawnmowers and resulted in additional reductions in these pollutants for newer equipment.

What is the current state of electrifying and using this equipment: electric equipment options, battery and charging options, total cost to set up and maintain, etc.

Today, there are powerful, quiet electric alternatives readily available and proven in full-time large-scale commercial settings. The competitive cost and efficiency of electric landscaping equipment for residential and commercial uses makes it economically possible to move away gas-powered equipment. More details on electric equipment runtimes and pricing are available online:

<https://www.agza.net/agza-approved-equipment>

What possible funding options are there: clean air funds?

Possible funding sources include the State of Oregon Department of Environmental Quality, The Clean Fuels Program- PGE, Metro, Oregon Community Foundation. City Council's support for further research would enable greater access to pursue funding opportunities.

What might a successful outcome look like for resolving this issue?

A successful outcome would be quieter, cleaner landscaping equipment for maintaining residential, City, and commercial properties.

What have other cities done?

Cities have taken a variety of approaches, ranging from community engagement and education to voluntary trade-in programs to equipment bans. Any of these initiatives would advance our progress toward a cleaner, quieter Lake Oswego.

Examples include:

- A successful voluntary trade-in program in SCAQMD district:
<http://www.aqmd.gov/home/programs/community/community-detail?title=lawn-equipment>
- A successful program banning gas-powered landscaping equipment and using all electric equipment for City operations is the City of Ojai : <https://www.agza.net/blog/ojai-agza-green-zone>
- Leaf blower ban in Washington DC:
<https://www.theatlantic.com/magazine/archive/2019/04/james-fallows-leaf-blower-ban/583210/>
- Example of ordinance of gas powered leaf blowers, Palm Springs, CA:
<http://www.palmspringsca.gov/home/showdocument?id=54759>

For more information and examples, see:

1. <https://www.theatlantic.com/magazine/archive/2019/04/james-fallows-leaf-blower-ban/583210/>
2. <https://www.epa.gov/sites/production/files/2015-09/documents/banks.pdf>