

Memo

Date: September 2, 2022
To: Honorable Kshama Sawant, Chair, Sustainability and Renter Rights Committee
From: Christopher Williams, Acting Superintendent, Seattle Parks and Recreation
Jessyn Farrell, Director, Office of Sustainability & Environment
Subject: Response to SLI OSE-003-B-001

BACKGROUND

Gas-powered leaf blowers (GPLBs) are a standard tool for landscapers and maintenance workers, yet they can contribute to several significant public health and nuisance issues: toxic emissions, greenhouse gases (GHGs), particulate matter, noise, and vibration. The localized air pollution and noise can impact the health of the operator as well as bystanders, during operation. The overall impact on GHG emissions is minimal when compared to other GHG emission sources. The latest GHG inventory of Seattle's yard equipment (mowers, trimmers, blowers, etc.) from 2018 shows that this equipment makes up about three hundredth of a percent of citywide (expanded scope) GHG emissions (.003%), or about 20,000 metric tons of CO₂e.¹

Seattle's City Council and some constituents have expressed ongoing interest in reducing the impact from GPLBs.

- In the 2014 Adopted Budget, Council requested the Department of Planning and Development (DPD, now the Seattle Department of Construction and Inspections) consider strategies to reduce or eliminate noise and emissions caused by GPLBs ([SLI 70-1-A-1](#)). In [response](#), DPD provided an analysis of relevant regulations, an inventory of the City's gas-powered leaf blowers by departments and assessed various options to reduce the use of gas-powered leaf blowers in the city. DPD also identified several challenges with restricting GPLBs, including limitations of electric leaf blower technology and concerns about racial equity impacts and enforcement.
- In 2021, the Mayor's Office requested Seattle Parks and Recreation (SPR) develop a strategy to transition to battery-powered leaf blowers as part of a deliverable for the Transportation Electrification Blueprint. This analysis was delivered in December 2021.
- In 2021, the Council requested the Office of Sustainability and Environment (OSE), SPR, and other departments, develop a plan to phase out the use of all gas-powered leaf blowers in Seattle within two years via SLI OSE-003-B-001 (driver of this memo).
- In 2022, Councilmember Pedersen commissioned a UW Evans School of Public Policy & Government Consultant Lab (Evans Consultants) with developing a specific implementation plan for phasing out GPLBs in Seattle that identifies and addresses the corresponding challenges. Key findings and recommendations of this effort can be found [here](#).
- In August 2022, Councilmember Pedersen introduced [Resolution 32064](#), calling for the phasing-out of harmful gas-powered leaf blowers from City government by 2025 and the rest of Seattle by 2027.

¹ Please refer to page 5 of the 2018 GHG Inventory report for a detailed explanation of what is included in core vs. expanded emissions and page 13 for the data details.
https://www.seattle.gov/documents/Departments/OSE/ClimateDocs/2018_GHG_Inventory_Dec2020.pdf

Statement of Legislative Intent OSE-003-B-001

On November 16, 2021, the Seattle City Council passed a Statement of Legislative Intent (SLI OSE-003-B-001) asking OSE and SPR to submit a plan to transition from the use of gas-powered leaf blowers to electric blowers in two years. Key activities called for in the SLI included:

- Evaluation of available commercial-grade electric leaf blowers on the market (e.g., battery life, charging time, efficacy as compared to gas-powered leaf blowers, etc.);
- Costs associated with transitioning all City-owned leaf blowers to electric (e.g., labor, equipment, charging infrastructure, etc.) and potential strategies for reducing these costs;
- Identification of key external stakeholders who should be engaged in discussions related to the use of leaf blowers, such as major institutions, landscaping company owners, etc., as well as community groups or other organizations concerned about the noise and air pollution caused by gas-powered leaf blowers;
- Creation of a buy-back program for privately-owned gas-powered leaf blowers;
- Considerations regarding health and safety impacts on workers who use gas-powered leaf blowers as compared to other methods of leaf removal;
- Racial Equity Toolkit (RET) analysis; and
- Timeline for implementation, with specific steps, that takes into consideration the needs of businesses, City departments, residents, and other stakeholders; general availability, cost, and efficacy of commercial grade electric leaf blowers; racial equity; enforcement; program costs and administration; and potential risks. Key external stakeholders and others identified through the RET should be engaged in the development of the proposed timeline

OSE was not able to implement requested actions of SLI OSE-003-B-001 due to capacity and resource constraints; Mayoral and Council direction to prioritize GHG emission reduction and climate justice ; and limited expertise and connection to the procurement, operational use, and regulation of GPLBs. Other City departments face similar constraints and challenges with budget limitations, staffing issues, and other pandemic-related issues.

City departments recognize the transition away from GPLBs is good for people and the environment.

However, an effective transition requires adequate resources to develop and implement the diverse portfolio of work necessary to achieve the goal, equitably and efficiently. Several high-level recommendations offered to this end include:

- **Start with a successful transition inside City government prior to any requirements of the private sector.** Seattle should lead by example in its own operations.
- **Adequately engage and resource departments with regulatory authority and strong connections to the purchase, use, and operations of GPLBs to lead the work.**
- **Ensure the approach is designed and developed with a strong racial equity framework** to minimize impacts on small and individual GPLB operators. Engage stakeholders in-language and in a spirit of partnership to achieve the goal.
- **Dedicate the resources necessary to assess, design, and implement the diverse portfolio of policy and programmatic work required to deliver on this objective.** This is a substantial body of work and requires additional staffing and budget to support meaningful action. **If Council is committed to accelerating a citywide and communitywide transition away from GPLBs, budget action must accompany the policy signal.**

SPR is committed to reducing its carbon footprint while maintaining a safe, healthy, and enjoyable parks and recreation system. As the City's largest operator of GPLBs, SPR has been and continues to advance strategies to reduce the use of GPLBs. The remainder of this memo details SPR's ongoing efforts to reduce the use of GPLBs. These strategies go beyond equipment choice to include planning and design, best management practices, and a thoughtful transition in grounds maintenance tools.

USE OF GPLBs BY SEATTLE PARKS & RECREATION

Leaf blowers are used across Seattle's parks and recreation system on most days, with heavier use in the autumn when leaves fall from our deciduous trees. In 2021 SPR staff logged 6,668 hours managing leaves in our parks, although this is likely an undercounting given how maintenance staff track their time. Blowers are one of many critical tools that are used to clear areas for safety (paths, stairways, etc.), to keep porous paved surfaces from clogging, to clear leaves from recreational assets (such as wading pools, spray parks, dog parks, sport courts, skate parks, and play areas), to assist in adding mulch to garden beds, and to clear drains of organic debris. Currently SPR has approximately 300 blowers in our inventory, with about 10% being battery-powered.

All fossil-fuel powered equipment contributes to greenhouse gas emissions (GHG), and SPR is continually seeking ways to reduce this environmental impact. Based upon emissions estimates from the Environmental Protection Agency and internal fuel use data from 2020, SPR contributed an estimated 167 metric tons of carbon dioxide to the atmosphere from our small equipment. In addition, the localized impacts of using this equipment to both park visitors and employees, including air and noise pollution, is well documented. In response, SPR has adapted maintenance operations to reduce our use of these gas-powered tools through many approaches:

- SPR uses electric blowers for custodial needs.
- In 2019, SPR conducted a pilot for battery-powered blowers throughout the system to learn about best practices and identify areas where they could be used more frequently.
- In 2020, SPR transitioned downtown park maintenance to primarily using battery-powered leaf blowers, and every District now has some of these tools available.
- In addition to equipment, SPR also uses alternate methods when possible such as manual tools, riding pavement sweepers, and leaf vacuums to clear debris.
- SPR also has purchased other electric tools, including chainsaws, hedge trimmers, and even a forklift.
- Other practices limit how much blowers are used during park maintenance activities. Many leaves, especially smaller ones, are blown immediately into garden beds to decompose naturally and function as a mulch and reduce the amount of blowing necessary. Also, leaves on turf are mulched in place by a mower to return nutrients back into the soil.
- On June 8, 2022, SPR grounds crews held a demonstration by Greenworks of electric tools to assess their efficacy. We continue to follow technology trends and advances.

SPR has identified opportunities and challenges for shifting to more use of electric powered leaf blowers. The following strategy seeks to thoughtfully advance this goal as technology improves and ensure that we can continue to maintain our parks for the safe enjoyment of all, while also minimizing negative impacts from blowers.

Challenges

Transitioning to battery-powered leaf blowers for our park maintenance comes with a number of challenges that need to be considered and planned for prior to any commitments.

Power

An essential function of blowers is to provide enough air displacement to push the debris to its desired location. With less and lighter debris, current electric blowers are now capable of this task, particularly on the “power” setting that is preferred. However, in the fall when there are more leaves and they are saturated with water, battery-powered blowers need to have significantly more power than current models provide. We anticipate that improvements in technology will bring electric options on par with gas-powered options in the near future, opening up more possibilities to confront the challenge of power.

Duration

Other challenges exist beyond power, however, including duration of use and cost of batteries to achieve equivalent use. Simply put, the batteries available now only last 20-45 minutes on the power setting and need to be replaced to allow for equivalent use. When tackling blowing needs that require covering long distances (clearing trails and pedestrian paths), it is impractical to carry replacement batteries. Linked to this challenge is the cost of batteries, which are about \$400 for each additional replacement. We estimate that four batteries would be required per blower to match the duration of need for current use.

Charging

Given the need for multiple batteries for each leaf blower, SPR will require enough charging capacity (space and electrical) throughout the system. At our district crew quarters, where most staff and equipment are based from and stored, we have identified the need to improve the electrical infrastructure at many buildings to support additional load. To fully assess the electrical capacity needs, we would need to hire a contractor to identify the current electrical systems in our buildings. Charging in the field is currently not an option, as Finance and Administrative Services fleet specifications do not currently allow for inverters in trucks. However, should inverters be allowed, or electric trucks purchased, then charging in the field would be possible and may address this challenge.

Long-Term Strategy

SPR is committed to reducing our carbon footprint while maintaining a safe, healthy, and enjoyable parks and recreation system. As part of this value, we are continuing to advance a number of strategies including to reduce the use of gas-powered leaf blowers. These strategies go beyond equipment choice to include planning and design, best management practices, and a thoughtful transition in grounds maintenance tools.

Design to reduce need for clearing leaf debris

Leaves that require blowing come from a combination of deciduous trees and proximity to recreational assets that need to be cleared. By planting evergreen trees instead of deciduous, placing trees in groves where leaf litter is a beneficial addition, and planting resilient ground covers that can handle this organic debris, SPR can lessen the need for the use of blowers. SPR is currently updating relevant design standards and design review processes for all current projects.

Update Best Management Practices

Similar to updating our designs, we will also update our Best Management Practices for turf, shrub beds, and natural areas to reduce the need for blowers in some instances and clarify what type of equipment to use in different situations. Practices such as keeping leaves in garden beds to mulch naturally, mulch mowing leaves in place in turf areas, and prioritizing battery-powered leaf blowers in the spring and summer are some practices already in use that will be expanded and formalized in our Best Management Practices documents.

Assess Labor Implications

Our crews share that using manual methods to manage leaves in parks will take significantly more time when compared to using blowers; we do not see this as a feasible option at this point. However, SPR is considering conducting some tests of the difference in time and effectiveness of different methods of leaf removal to inform future strategies. In all our assessments we will continue to prioritize the health and safety of our employees. Currently employees are required to use personal protective equipment when using blowers such as ear and eye protection and masks. Our hope is that battery-powered leaf blower technology will evolve to reduce the weight impact of equipment while also increasing the power.

Invest in Electrical Capacity Upgrades at Facilities as Part of Larger Efforts

To support the quantity of leaf blowers and the frequency of need for recharging batteries, SPR needs to understand the opportunities and constraints in our facilities. Currently Seattle City Light is conducting an inventory of City of Seattle building electrical capacity that will help SPR better assess where we need to upgrade our electrical infrastructure to support the increased need for charging batteries as well as other electrification goals. Given the age and known limitations of our facilities, it is likely that extensive (and expensive) work will need to be done in our crew quarters. SPR is also planning to hire an electrical contractor to speed up this assessment.

Research and Test Technology

SPR will continue to follow the trends in leaf blower technology and test new equipment as it becomes available. In June 2022, SPR held an equipment “rodeo” with Greenworks, an industry leader in battery-powered landscaping tools, to assess their efficacy. As part of our regular equipment replacement, we include new battery-powered blowers to our inventory to pilot the latest improvements in equipment and assess their effectiveness in different types of parks, situations, and seasons. We also track and review other technological advances that can support this effort, including the use of electric trucks that may offer the opportunity to charge batteries in the field. SPR will continue to work with FAS on this aspect as they own the City’s fleet.

Transition Thoughtfully

Battery-powered leaf blowers are not yet on par with GPLBs in regard to their effectiveness as a park maintenance tool for SPR, so a complete shift to them is not planned at this time. We will continue to transition to the use of these tools thoughtfully over the coming years. This strategy will include purchasing the most fuel-efficient and least polluting equipment when GPLBs are required and purchasing the latest battery-powered blowers as part of our equipment replacement cycle. Our goal is to have 50% of our blowers be electric by 2026. Currently battery-powered blowers account for about 10% of our inventory. This transition is estimated to cost about \$30,000 per year over the next four years, which is about double the typical cost of GPLB replacements. We will seek to reduce costs by purchasing in bulk for our entire system each year. Recognizing the infrastructure improvements needed to support this strategy, we will align our purchasing and use of battery-powered leaf blowers with the investments made to support their charging requirements.