

Two-stroke engine small equipment: Steps to pursue a ban

Date: June 21, 2023

To: Infrastructure and Environment Committee

From: Executive Director, Environment and Climate Division

Wards: All

SUMMARY

This report responds to a request ([2023.IE1.11](#)) to report back with a plan to implement a ban on use of two-stroke engine leaf blowers, lawnmowers and other small engine equipment because of their adverse impact on air quality and human health.

To support consideration by City Council on implementing a potential ban on the use of two-stroke engines, a two-step decision making approach is being taken. This report outlines the first step, which is to seek Council direction on whether Council wishes to pursue a ban on two-stroke engines within Toronto. Subject to City Council direction and resourcing, and following consultation with residents and businesses, a second report would be brought forward to provide a detailed plan to establish, implement, enforce and encourage compliance with a ban, including a proposed bylaw.

Previous reports brought to City Council have described the impact of two-stroke engine leaf blowers on climate, air quality and health, and noise. This report provides a compendium of the City's past decisions and activities on the topic of two-stroke engine equipment.

Separately, staff have determined that each of the three approaches of climate, health and noise have not individually provided a sufficient rationale for action to be taken to ban the use of two-stroke engines. Furthermore, based on the information reviewed to date, staff have not identified a sufficient rationale from whatever combined or cumulative adverse impacts to climate and human health may exist to recommend a ban at this time. However, City Council may decide to take a precautionary approach with respect to these climate, health and noise factors and enact a ban regardless. Generally speaking, City Council has the authority to ban the use of two-stroke engine small equipment depending on the nature, scope, adoption, and implementation of the measure.

A parallel report, on the City of Toronto's corporate transition plan and feasibility assessment of phasing out gas-powered leaf blowers for municipal use, is being led by the General Manager, Parks, Forestry and Recreation, the General Manager, Transportation Services and the General Manager, Fleet Services and will be brought forward to Infrastructure and Environment Committee in the first quarter 2024.

RECOMMENDATIONS

The Executive Director, Environment and Climate recommends that City Council adopt one of the following options to address two-stroke engine equipment:

Option A - Leading by example in the corporation and community

A1. City Council affirm its support for the City of Toronto to phase out gas-powered leaf blowers for municipal use and reiterate the request in 2021.IE25.21 to the General Manager, Parks, Forestry and Recreation, the General Manager, Transportation Services and the General Manager, Fleet Services to report with a transition plan and feasibility assessment in 2024; and

A2. City Council request the Executive Director, Environment and Climate, and the Executive Director, Municipal Licensing and Standards to continue public promotion of the appropriate use of small engine equipment and alternative ways to maintain yards;

OR

Option B - Pursuing a ban on two-stroke engine equipment

B1. City Council express its support for a ban on the use of two-stroke small engine equipment in Toronto as a precaution against any adverse impacts to human health and climate; and

B2. City Council direct the Executive Director, Environment and Climate, the Executive Director, Municipal Licensing and Standards, the Medical Officer of Health, and the City Solicitor, in consultation with Divisions that operate two-stroke engine equipment, to:

a. identify the resources required to develop and implement a ban on two-stroke equipment, as outlined in Attachment 2 to this report, and any other necessary work that emerges throughout the process;

b. if adequate resources are funded in the 2024 budget, initiate the work for City Council to enact a bylaw imposing a ban on two-stroke equipment, and report to Infrastructure and Environment Committee in 2024.

FINANCIAL IMPACT

There are no immediate financial implications resulting from this report.

Financial impacts resulting from either option must be assessed and included in the future budget submissions of the affected divisions.

The Chief Financial Officer and Treasurer has reviewed this report and agrees with the financial impact information.

DECISION HISTORY

On January 30, 2023, Infrastructure and Environment Committee directed the City Manager to report back to the April 26, 2023 meeting of Infrastructure and Environment Committee with a plan to implement a ban on use of two-stroke engine leaf blowers, lawnmowers and other small engine equipment because of their adverse impact on air quality and human health, separately from the noise bylaw review referred to in Recommendation 20 of Item IE26.16, in its decision on Net Zero Actions Update (2023.IE1.11). This report responds to that direction.

<https://secure.toronto.ca/council/agenda-item.do?item=2023.IE1.11>).

On July 19, 2022, City Council adopted the Report on Outstanding Noise Issues ([2022.EC31.4](#)), including a Supplementary Report – Outstanding Noise Directives – Additional Information on Leaf Blower Noise ([2022.EC31.4a](#)), which responded to a request from City Council (2021.IE26.16). In its decision City Council amended Toronto Municipal Code Chapter 591, Noise, Section 2.6 - Power devices, to further restrict when the devices can be used and to exempt all City operations (including services contracted by the City) from the bylaw. City Council directed the General Manager, Parks, Forestry and Recreation to develop a plan to phase-out the gas-powered equipment that is used by Parks, Forestry and Recreation, within a reasonable timeframe. City Council directed the Executive Director, Municipal Licensing and Standards, to undertake public education on appropriate use of lawn equipment and to report back during the Noise Bylaw Review in 2023 regarding options for setting decibel limits for power devices.

<https://secure.toronto.ca/council/agenda-item.do?item=2022.EC31.4>)

On December 15, 2021, in its decision Part 20 on the report, TransformTO – Critical Steps for Net Zero by 2040 (2021.IE26.16), City Council expressed its support for a ban on use of two-stroke engine leaf blowers, lawnmowers and other small engine equipment and vehicles and requested a report back on the implementation of a ban as part of the noise update report in 2022. Report 2021.IE26.16 [Attachment F](#) - Small Engine Lawn and Garden Equipment, responded to a request (2020.IE15.8) to report on the environmental and associated health impacts of gasoline-powered, two-stroke engine leaf blowers and other similarly operated garden equipment, including the feasibility of a year-round ban or a ban from May to September.

<https://secure.toronto.ca/council/agenda-item.do?item=2021.IE26.16>)

On October 26, 2021, Infrastructure and Environment Committee, in its adoption of the report, Phasing Out Gas-Powered Leaf Blowers for Municipal Use (2021.IE25.21), requested the General Manager, Parks, Forestry and Recreation, the General Manager, Transportation Services and the General Manager, Fleet Services to report back in the first quarter of 2022 with a transition plan and feasibility assessment of phasing out gas-powered leaf blowers for municipal use by 2025.

(<https://secure.toronto.ca/council/agenda-item.do?item=2021.IE25.21>)

On September 30, 2020, City Council adopted Request to Study the Environmental Impact of Two-Stroke Engine Garden Equipment (2020.IE15.8) which requested the City Manager, in consultation with the Medical Officer of Health, to report back in the first quarter of 2021 on the environmental and associated health impacts of gasoline-powered two-stroke engine leaf blowers and other similarly operated garden equipment, including the feasibility of a year-round ban or a ban from May to September. Council also requested the City Manager, in consultation with the Medical Officer of Health and the Executive Director of Municipal Licensing and Standards, to report back on the noise generated from gas-powered and electric leaf blowers and other similar garden equipment, including the feasibility of a year-round ban or a ban from May to September.

(<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2020.IE15.8>)

On July 4, 2017, City Council adopted the report, TransformTO: Climate Action for a Healthy, Equitable and Prosperous Toronto - Report 2 - The Pathway to a Low Carbon Future, [Attachment C](#) - Evaluation of Potential Additions to TransformTO Report 1 Strategies, which provided an overview of City activities and issues related to gas-powered lawn and garden equipment.

(<https://secure.toronto.ca/council/agenda-item.do?item=2017.PE19.4>)

COMMENTS

1. Introduction

Staff were directed to report back to Infrastructure and Environment Committee, "with a plan to implement a ban on the use of two-stroke engine leaf blowers, lawnmowers and other small engine equipment because of their adverse impact on air quality and human health, separately from the noise bylaw review referred to in Recommendation 20 of Item IE26.16".

This report provides a compendium of the City's past decisions and activities on the topic of two-stroke engine equipment. It also provides a legal perspective and outlines approaches taken by other jurisdictions (Attachment 1) and the steps that would be required to further pursue a ban on use of this equipment, should City Council choose to do so (Attachment 2).

Environment and Climate consulted with Legal Services, Public Health, Municipal Licensing and Standards, Parks, Forestry and Recreation, and Fleet Services in the preparation of this report.

2. Past approaches to ban the use of two-stroke engine small equipment on the basis of climate, health and noise alone

Over time, staff have been directed to consider the need for a ban on two-stroke equipment on the basis of climate, health and noise. Separately, the three approaches have not provided sufficient rationale for action to be taken to ban the use of two-stroke engines. However, the City's climate, health and noise concerns, taken together, may provide a sufficient basis for City Council to enact a ban, depending as well on the ban's scope, adoption and implementation.

Each area is summarized below:

Climate

Burning fossil fuels is the primary cause of climate change. As noted in a previous report to City Council, greenhouse gas (GHG) emissions from burning fossil fuels in small engines such as leaf blowers and other similar garden equipment are relatively low as compared to other sources of GHG emissions in Toronto (2021.IE26.16 [Attachment F](#)). According to the City's 2020 annual inventory of community-wide GHG emissions, the largest source of GHG emissions in Toronto is natural gas used for space heating in buildings, followed by fossil fuels used for transportation.¹

Toronto's TransformTO Net Zero Strategy sets transitioning from fossil fuels as its key priority for limiting climate change, particularly by focusing on the largest sector sources of GHG emissions. While the City of Toronto is not able to quantify community emissions from offroad vehicles or equipment, including two-stroke engines, emissions from this equipment are approximately 0.05% of corporate fuel emissions based on equipment used by the City through its various operations.

As the total quantity of GHG emissions from two-stroke engines is considered relatively low compared to other sources, a ban on two-stroke engines has not been recommended by staff as a strategy to address climate change. Further information about priority areas in the City's approach to climate can be found in the TransformTO Net Zero Strategy (2021.IE26.16) and in the TransformTO Net Zero Strategy 2022 Annual Report on progress (2023.IE3.3).

Health

The issue of air quality and health was addressed in previous TransformTO reporting (2017.PE19.4, [Attachment C](#)). A Toronto Public Health assessment indicated that motor vehicle traffic is the biggest local source of air pollution and air pollution-related health effects in Toronto², and based on the available information the contribution of small

1 City of Toronto (2022). 2020 Sector-Based Greenhouse Gas Emissions Inventory. <https://www.toronto.ca/wp-content/uploads/2023/01/8eab-2020-Sector-based-Greenhouse-Gas-Emissions-Inventory-v1.pdf>

2 Toronto Public Health (2014). Path to Healthier Air: Toronto Air Pollution Burden of Illness Update. <https://www.toronto.ca/wp-content/uploads/2017/11/9190-tph-Air-Pollution-Burden-of-Illness-2014.pdf>

engine emissions to air pollution in Toronto was considered minimal in the context of all sources.

In 2019, Public Health Ontario (PHO) conducted a literature review looking at possible exposures from the use of gas-powered leaf blowers and similar equipment in residential settings, and how the use of this equipment is regulated in other Canadian jurisdictions. That review found that gas-powered lawn and garden equipment is a source of non-road emissions such as carbon monoxide (CO), fine particulate matter (PM), and volatile organic compounds. Studies on fugitive dust emissions show that electric leaf blowers and gas-powered leaf blowers generate similar levels of particulate matter. Evidence indicates that operators of gas-powered lawn and garden equipment may be exposed to elevated levels of some pollutants; however, those exposures are mostly below occupational exposure limits. The noise generated by gas-powered leaf blowers can be elevated enough to cause hearing damage for operators in certain use scenarios. Some jurisdictions in Canada have placed restrictions on leaf blower use. Where they exist, limiting noise is the most common reason for doing so. The review did not identify any jurisdictions in Canada where leaf blowers were banned outright.

In 2021, Toronto Public Health concluded that the noise, dust and air pollution resulting from the use of small engines (leaf blowers) constitutes a nuisance that can be addressed through municipal bylaws but not a public health harm that the Health Protection and Promotion Act would address (2021.IE26.16 [Attachment F](#)).

In 2023, Toronto Public Health further looked at literature that considered emissions and potential health impacts from gas-powered leaf blowers and related two-stroke engine lawn and garden equipment. The results were similar to those of the 2019 PHO review findings in that this equipment type is a source of emissions, and that operators may be exposed to elevated levels of noise and some pollutants. The review found that household ownership of gas-powered lawn and garden equipment in Toronto, including leaf blowers, has been trending downwards from 2013-2021 according to data from [Statistics Canada](#).

Noise

During a review of the Noise Bylaw in 2019 ([2019.EC3.6](#)), and as part of an update report in 2022 ([2022.EC31.4](#)), staff considered a ban on leaf blowers because of noise concerns. It was determined that banning leaf blowers, due to noise, is overly restrictive based on the low volume of complaints, low public support, practicality of enforcing the ban, and unintended effects on the City, industry and consumers. More information is available in the staff reports.

The Noise Bylaw ([Chapter 591](#)) does not distinguish between gas-powered or electric leaf blowers. Moreover, the Noise Bylaw does not prohibit a thing or activity due to environmental or health concerns. New equipment being sold today tends to be quieter, with electric models being quieter than gas-powered models. However, the market now includes "low noise" gas-powered leaf blowers, which are rated at a sound level of 65 dB. Comparatively, typical speech is about 60 dB and a washing machine is 75 dB ([2022.EC31.4](#)).

As directed by Council ([2022.EC31.4](#)), Municipal Licensing and Standards, with support from Environment and Climate, executed a public education campaign on leaf blowers and the appropriate use of lawn equipment to help address noise issues. The goal was to educate residents about the rules for using leaf blowers, how they can minimize leaf blower noise and community impacts, and alternative ways and green technology to maintain yards. The campaign ran in the summer and fall of 2022 focused on social media ads and a dedicated webpage. More than 812,000 people were reached via social media posts and ads, and over 20,000 webpage views were received during the campaign. Municipal Licensing and Standards plans to run a similar campaign again this summer and fall. Based on public feedback, City Council also approved an extension of the prohibition on power device noise from 7:00 a.m. to 8:00 a.m. on weekdays that are not statutory holidays.

3. Legal Summary

City staff consulted with Legal Services and was advised that, depending on the nature, scope, adoption, and implementation of the ban, Council would be authorized to enact such a measure.

4. Steps to Ban the Use of Two-Stroke Engines

Various activities would need to be undertaken if City Council decides to pursue and implement a ban on use of two-stroke engines. An overview of the activities required is provided in Attachment 2. Budget for these activities would need to be secured through the annual budget process, as they are not currently reflected in Divisions' workplans or operating budgets.

When considering a ban on the use of two-stroke gasoline engines, it is possible to prioritize types of equipment for phase out. Attachment 3 outlines preliminary selection criteria, as well as a preliminary list of equipment types for prioritization in and exclusion from a ban, if City Council decides to further pursue this approach.

5. Current activities

City of Toronto corporate phase-out

The Infrastructure and Environment Committee requested the General Manager, Parks, Forestry and Recreation, the General Manager, Transportation Services and the General Manager, Fleet Services to report back with a transition plan and feasibility assessment of phasing out gas-powered leaf blowers for municipal use by 2025. Similarly, City Council directed the General Manager, Parks, Forestry and Recreation to develop a plan to phase-out the gas-powered equipment that is used by Parks, Forestry and Recreation, within a reasonable timeframe.

A report back on the transition plan and feasibility assessment of phasing out gas-powered leaf blowers for municipal use, is planned and will include all Divisions that

utilize this equipment. While this collaboration is underway, Parks, Forestry, and Recreation continues to replace 10 to 15 percent of two-stroke engine equipment with electric alternatives each year, where funding is made available, as part of an existing phase out program ([2022.EC31.4](#)).

While divisions are committed to phasing out the use of two-stroke equipment, the transition plan must consider replacement equipment that meets operational needs, implementation of infrastructure to support new equipment and changes to new contracts to outline the requirement for alternatives to two-stroke engines. These factors, as well as available resources and funding, must be assessed and considered through the transition plan. Therefore, a ban on use may need to be phased in over multiple years to provide both City and commercial operators with the time required to make the necessary changes. Given that the Infrastructure and Environment Committee has already directed staff to consider a ban on the City's use of gas-powered leaf blowers, it would be advisable to align any wider ban on equipment by public use with a City corporate phase-out.

6. Discussion

If City Council decides to further pursue a ban on use of this equipment, pending resourcing, a report would be brought forward to provide a detailed plan to establish, implement, enforce and encourage compliance with a ban, including a proposed new bylaw.

CONTACT

Cecilia Fernandez, Acting Manager, Policy & Research, Environment and Climate Division, 416-338-5469, Cecilia.Fernandez@toronto.ca

SIGNATURE

James Nowlan
Executive Director, Environment and Climate

ATTACHMENTS

Attachment 1. Jurisdictional overview of restrictions on small equipment
Attachment 2. Overview of steps to pursue a ban on use of two-stroke small engine equipment

Attachment 3. Types of two-stroke engine equipment considered for ban on use and their prioritization

Attachment 1.

Jurisdictional overview of restrictions on small equipment

Regulation of emissions by higher orders of government

In Canada, the Federal Government regulates air emissions from lawn and garden equipment through its Off-Road Small Spark-Ignition Engine Emission Regulations. In light of legislation introduced by the state of California, in 2022 the City advocated in writing to the Government of Canada to consider amending the regulations to support the transition to lawn and garden equipment with zero GHG and air pollutant emissions.

Environment and Climate Change Canada has encouraged people to switch to a battery-powered leaf blower as part of the 2021 Protect Nature Challenge to improve air quality. The Challenge indicated that using a small gas engine lawn mower for one hour was equivalent in terms of air pollution to driving 480 km from Quebec City to Ottawa, and using a small gas engine snow blower for one hour was equivalent to driving 550 km from Toronto to Montreal.³

The approach taken by California is often cited in discussions of regulating emissions from small-engine equipment. The California Air Resources Board (CARB) indicated in 2021 that in California, Small Off-Road Engines (SORE)⁴ emit more nitrogen oxides (NOx) and reactive organic gases (ROG) than light-duty passenger cars, both in summer and annually.⁵ As noted previously (2021.IE26.16, [Attachment F](#)), the U.S. state of California recently enacted legislation requiring CARB to adopt regulations to prohibit engine exhaust and evaporative emissions from small off-road engine equipment (including but not limited to leaf blowers) that emit above a particular threshold and provide rebates or other incentives to support the transition to net-zero small off-road engine equipment

(https://leginfo.ca.gov/faces/billTextClient.xhtml?bill_id=202120220AB1346).

Those regulatory changes are now in force.⁶

3 Government of Canada (2021). Improve Air Quality - Protect Nature Challenge.

<https://www.canada.ca/en/environment-climate-change/services/nature-legacy/activities/improve-air-quality.html>

4 According to CARB, “Small off-road engines include spark-ignition, gasoline-powered two-stroke (G2) engines, gasoline-powered four-stroke (G4), and compressed natural gas (CNG) engines, rated at or below 19 kilowatts (25 horsepower [hp]) which are utilized within a broad range of equipment in a variety of different categories such as: Lawn & Garden, Light Commercial”, etc. California Air Resources Board (2020). Emissions Model for Small Off-Road Engines - SORE2020.

[https://ww2.arb.ca.gov/sites/default/files/2020-](https://ww2.arb.ca.gov/sites/default/files/2020-09/SORE2020_Technical_Documentation_2020_09_09_Final_Cleaned_ADA.pdf)

[09/SORE2020_Technical_Documentation_2020_09_09_Final_Cleaned_ADA.pdf](https://ww2.arb.ca.gov/sites/default/files/2020-09/SORE2020_Technical_Documentation_2020_09_09_Final_Cleaned_ADA.pdf)

5 California Air Resources Board (2021). Public Hearing to Consider Proposed Amendments to the Small Off-Road Engine Regulations: Transition to Zero Emissions. Staff Report: Initial Statement of Reasons.

<https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2021/sore21/isor.pdf>

6 California Air Resources Board (2023). 2021 Amendments to the Small Off-Road Engine Regulations.

<https://ww2.arb.ca.gov/our-work/programs/small-road-engines-sore/2021-amendments-small-road-engine-regulations>

Jurisdictional scan of restrictions on small-engine equipment

Table 1 provides a non-exhaustive list of North American jurisdictions with restrictions on small-engine equipment. Depending on the jurisdiction, the restricted equipment may be small-engine equipment generally, gasoline-powered small engine equipment only, or devices that are named (e.g. leaf blowers), rather than two-stroke small equipment as a group.

Table 1. North American jurisdictions with restrictions on small engine equipment.

Jurisdiction	Restriction details ⁷
Canadian cities	
Brampton	Prohibits noises likely to disturb inhabitants. ⁸
Mississauga	Time of use prohibition. ⁹
Ottawa	Time of use prohibition. ¹⁰
Calgary	Time of use prohibition. ¹¹
Edmonton	Time of use prohibition for general noise. ¹²
Montreal West	Gas-powered two-stroke leaf blowers and vacuums are completely prohibited for private use. Time of use prohibition exists for other categories of equipment. ¹³

7 Recent jurisdictional scans:

- Table 1 was developed from a jurisdictional scan of restrictions on power device noise in 2022. EC 31.4, Attachment B. <https://www.toronto.ca/legdocs/mmis/2022/ec/bgrd/backgroundfile-226731.pdf>

- City of Oakville has produced a Leaf Blower Restrictive Use Scan, available at: <https://pub-oakville.escribemeetings.com/filestream.ashx?documentid=20883>

- Niagara on the Lake (2022) completed a jurisdictional scan.

[https://domino.notl.com/sites/notl/NOTLCOTW.nsf/bf5bf13826d2caa28525783e006e878e/BC78DB4E1EAA55308525880E004FE31F/\\$FILE/03514187.pdf](https://domino.notl.com/sites/notl/NOTLCOTW.nsf/bf5bf13826d2caa28525783e006e878e/BC78DB4E1EAA55308525880E004FE31F/$FILE/03514187.pdf)

8 City of Brampton. Noise By-Law. Section 1. <https://www.brampton.ca/en/city-hall/bylaws/all%20bylaws/noise.pdf>

9 City of Mississauga. Noise Control By-Law. Schedule 2, section 13.

<https://www.mississauga.ca/file/COM/noiseupdate.pdf>

10 City of Ottawa. Noise By-Law. Section 8. <https://ottawa.ca/en/living-ottawa/laws-licences-and-permits/laws/laws-z/noise-law-no-2017-255#section-43e5ffed-ed74-413d-943b-3f31d13aaac2>

11 City of Calgary. <https://www.calgary.ca/bylaws/residential-noise.html#:~:text=Under%20the%20bylaws%2C%20you%20cannot,bass%20noise%20for%20outdoor%20concerts>

12 City of Edmonton. Noise By-Law. https://www.edmonton.ca/city_government/bylaws/noise

13 City of Montreal. <https://montreal.ca/en/articles/restrictions-use-leaf-blowers-cdn-ndg-37814>

Jurisdiction	Restriction details⁷
Vancouver	Leaf blowers cannot be operated in the West End of Vancouver. Time of use prohibitions and decibel levels are in place elsewhere. ¹⁴ Committee recommended that Vancouver City Council direct staff to report back with recommendations to meet the goal to phase out and transition personal and commercial use of gasoline-powered landscape maintenance equipment in the City of Vancouver by 2024, giving consideration to a timeframe that is workable for residents and landscape maintenance service providers alike. ¹⁵
Victoria	Time of use prohibition and decibel level. ¹⁶
Westmount	Time of use prohibition. ¹⁷
Winnipeg	Time of use prohibition. ¹⁸
US cities	
Aspen, Colorado	Use of non-electric leaf blowers is prohibited. ¹⁹
Berkeley, California	It is unlawful for any person, including any City employee, to operate any portable machine powered with a gasoline engine used to blow leaves, dirt, and other debris off sidewalks, driveways, lawns, or other surfaces within the City limits. ²⁰
Cambridge, Massachusetts	Time of use prohibition and decibel level. Commercial leaf blower operators must be permitted prior to operating leaf blowers in Cambridge. ²¹

14 City of Vancouver. <https://vancouver.ca/home-property-development/leaf-blowers.aspx>

15 City of Vancouver. Meeting minutes. Page 27.

<https://council.vancouver.ca/20220126/documents/pspc20220126min.pdf>

16 City of Victoria. Noise By-Law. Section 17. <https://www.victoria.ca/assets/City~Hall/Bylaws/bylaw-03-012.pdf>

17 City of Westmount. <https://westmount.org/app-reglements/pdf/1519.pdf>

18 City of Winnipeg. Neighbourhood Liveability By-Law. Section 69.

<https://clkapps.winnipeg.ca/dmis/docext/ViewDoc.asp?DocumentTypeId=1&DocId=3996>

19 City of Aspen. Municipal Code.

https://library.municode.com/co/aspen/codes/municipal_code?nodeId=TIT18NOAB_CH18.04NOAB2_S18.04.040NOPRNU

20 City of Berkeley. Municipal Code. <https://berkeley.municipal.codes/BMC/13.40.070>

21 City of Cambridge. Leaf Blower Regulations. <https://www.cambridgema.gov/-/media/Files/licensecommission/leafblowersandnoise/lbregulationsenglish.pdf>

Jurisdiction	Restriction details ⁷
Hermosa Beach, California	Total ban. Prohibits use or operation of any portable machine powered with a combustion, gasoline or electric powered engine used to blow leaves, dirt and other debris off sidewalks, driveways, lawns and other surfaces. ²²
New York City	Time of use prohibition and decibel level. ²³
Portland, Oregon	Multnomah County (which includes Portland) is phasing out gas-powered leaf blowers before 2025. ²⁴ City of Portland has time of use prohibitions and decibel level. ²⁵
Santa Monica, California	Total ban. No person shall operate any motorized leaf blower within the city. ²⁶
Seattle, Washington	Seattle City Council passed a resolution in September 2022 to phase out the use of gas-powered leaf blowers in Seattle. ²⁷ The City currently has a time of use prohibition and decibel level. ²⁸
Solana Beach, California	Use of two-stroke gasoline leaf blowers prohibited, effective January 1, 2011. ²⁹
Washington, D.C.	As of January 1, 2022, the use of gasoline-powered leaf blowers is prohibited, with fines of up to \$500 per offence. ³⁰

22 Hermosa Beach. Municipal Code. <http://online.encodeplus.com/regs/hermosabeach-ca/doc-viewer.aspx?secid=988#secid-988>

23 New York City. <https://portal.311.nyc.gov/article/?kanumber=KA-01101>

24 City of Portland. <https://www.portland.gov/civic/news/2022/1/13/multnomah-county-bans-gas-powered-leaf-blowers>

25 City of Portland. Leaf Blower Regulations - 18.10.035 | Noise Related Issues and Topics | The City of Portland, Oregon (portlandoregon.gov)

26 Santa Monica. Municipal Code. https://library.qcode.us/lib/santa_monica_ca/pub/municipal_code/item/article_4-chapter_4_08-4_08_270

27 City of Seattle. <http://seattle.legistar.com/LegislationDetail.aspx?ID=5751085&GUID=2D9C98AE-A765-47C3-8124-A41D4B75B976&FullText=1>

28 City of Seattle. Municipal Code. Section 25.08.425. https://library.municode.com/wa/seattle/codes/municipal_code?nodeId=TIT25ENPRHIPR_CH25.08NOC_O_SUBCHAPTER_IIIENSOLE

29 Solana Beach. Ordinance No. 399. http://www.solana-beach.hdso.net/docs/CM_Ord399.pdf

30 Washington, D.C. Department of Licensing and Consumer Protection. <https://dlcp.dc.gov/page/leaf-blower-regulations#:~:text=On%20January%201%2C%202022%2C%20the,own%20gasoline%2Dpowered%20leaf%20blowers.>

Attachment 2.

Overview of steps to pursue a ban on use of two-stroke small engine equipment

The following activities would need to be undertaken if City Council decides to pursue and implement a ban on use of this equipment. Please note this is an overview of the steps required and not an exhaustive list. The final list of steps required would be determined by several factors, including the language of any City Council direction to staff to pursue a ban.

Budget for these activities would need to be secured through the annual budget process, as they are not currently reflected in Divisions' workplans or operating budgets.

Table 2. Overview of steps to pursue a ban on use of two-stroke small engine equipment

Activity	Resources required
Information gathering <ul style="list-style-type: none">• Update jurisdictional scan to see how other communities in North America have approached the issue, and assessment of relevance for Toronto;• Assessment of equipment types, ages and other factors, to inform priority setting for inclusion in a ban.	Consultant to undertake assessment of equipment types.
Consultation <ul style="list-style-type: none">• Consultation with community stakeholders, such as residents, landscaping companies, retailers, BIAs, Landscape Ontario, Board of Trade etc.	Consultant or additional staff to undertake consultation.
Transition Timing <ul style="list-style-type: none">• Transition plan and feasibility assessment of phasing out gas-powered leaf blowers and equipment for the City of Toronto's municipal use. (Work to inform a decision to pursue a ban would align with work underway in response to Council Directions 2021.IE25.21, Part 1 and 2022.EC31.4, Part 17);• Based on engagement with residents, businesses and stakeholders, identify transition timelines for implementing a ban on two-stroke engines, with consideration for economic, social and environmental challenges and opportunities;• Priority setting of equipment for two-stroke engine ban (See preliminary considerations in Attachment 3).	

Activity	Resources required
<p>Supporting ban implementation</p> <ul style="list-style-type: none"> • Assessment of enforcement considerations (including the inability to restrict sales beyond the borders of the City of Toronto, physically or online), processes and costs and development of enforcement approach; • Consideration of approaches to incentivize or encourage compliance (e.g. a trade-in program) and development of any approaches; • Development and adoption of a new bylaw to establish a ban aligned with City of Toronto's municipal transition timing by 2025. 	<p>Consultant or additional staff to develop approaches to encourage compliance.</p>
<p>Implementation, enforcement & promoting compliance</p> <ul style="list-style-type: none"> • Communications campaign to inform and engage residents and stakeholders (e.g. partnership and/or compliance training for retailers on which types of equipment are permitted for use in Toronto, and green yard-care alternatives); • Implementation of enforcement approach including training for bylaw enforcement staff; • Implementation of program to potentially incentivize or encourage compliance; • Monitoring of outcomes. 	<p>Consultant or additional staff to develop communications campaign. Budget to run communications campaign and to run program to encourage compliance, including any financial incentives.</p>

Attachment 3.

Types of two-stroke engine equipment considered for ban on use, and their prioritization

The marketplace is generally shifting from two-stroke gasoline engines to electric equipment. However, there are many types of two-stroke engine equipment that are still in use and available for purchase.

When considering a ban on the use of two-stroke gasoline engines, it is possible to prioritize types of equipment for phase out. It is also important to consider equipment types that may be less appropriate for a municipal ban on use at this time.

The following criteria are proposed as a preliminary guide for prioritization. Final criteria and prioritization will depend on a number of factors requiring further assessment, including data availability and availability of alternative equipment that performs the necessary function. It may be beneficial to consult stakeholders on the prioritization criteria.

Preliminary criteria for determining priority for a ban:

1. Two-stroke gasoline engines; and
2. Availability of alternative equipment to perform necessary functions.

Preliminary criteria for determining exclusion from a ban:

1. Primary use in Toronto is to remove snow or ice. For safety and accessibility reasons, this equipment is proposed for exemption from a ban;³¹
2. Marine engines;
3. Engines used for transportation; or
4. The equipment is being used for emergency work (e.g. to clear electrical and telecommunication cables of tree limbs after extreme weather).

Preliminary list of equipment types for potential ban and exemption from ban

The following is a non-exhaustive list of the types of two-stroke equipment that are proposed for inclusion if City Council decides to pursue a ban, pending further assessment against final criteria:

- Leaf blower
- Mower
- String trimmer (also called line trimmer)
- Chain saw
- Pole saw

³¹ This approach is consistent with Toronto Municipal Code, Chapter 591, Noise, which for the purpose of the bylaw defines a power device as, "[a]ny equipment driven otherwise than by muscular power used in the servicing, maintenance or repair of lawns, including chainsaws, lawn mowers, leaf blowers, grass trimmers or any other similar equipment. A power device does not include equipment used to remove snow or ice".

- Hedge trimmer
- Power brush/broom
- Power washer
- Rototiller
- Earth auger
- Vibratory compactor
- Saw (concrete, stone, metal, etc.)
- Drill
- Pump (water pump, sprayer pump, etc.)
- Generator

The following types of two-stroke equipment are proposed for exemption from a ban, pending further assessment against final criteria:

- Snow blowers and other equipment used primarily in Toronto to remove snow or ice
- Marine engines (e.g. small outboard boat motors, jet skis, etc.)
- Engines used for transportation (e.g. motorcycles, mopeds, scooters, etc.)
- Equipment that is being used for emergency work, including work done by any level of government or any of its agencies or agents (e.g. to clear electrical and telecommunication cables of tree branches after extreme weather).