Environmental Advisory Council Meeting Agenda

Tuesday, October 17, 2023 – 7:00 P.M.

Hybrid meeting via Zoom or in person at
Caucus Room, Township Administration Building, 75 East Lancaster Avenue, Ardmore

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Public Participation: The public may attend in person or virtually via Zoom. The Zoom URL may be obtained by emailing EAC@lowermerion.org or calling 610.645.6149 until 12:00 p.m. the day of the meeting. Public comments will be accepted until 12:00 p.m. the day of the meeting and can be provided via email to EAC@lowermerion.org, by postal mail addressed to Lower Merion *Environmental Advisory Council* via US Mail at 75 E. Lancaster Avenue, Ardmore, PA 19003, or by phone to 610.645.6149.

Dan Sutton– Chair, Adam Cutler – Vice Chair
Nancy Winkler, David Richman, Mitchell Burack, Steve Kimbrough,
Thomas Crookham, Ann Nozica, Rachel Spigler

1. Approval of minutes – Sep 26, 2023 [5 minutes]

2. Housekeeping [10 minutes]
    a. Welcome new members –Ann Nozica
    b. Assign EAC member to take and upload meeting notes
    c. Assign EAC member to review Township meeting agendas for October 17-November 21

3. Subdivision and Land Development Review
    a. None

4. Sustainability Manager Update [15 minutes]

5. EAC member commitments to Recommended 2023-2024 Sustainability Focus Areas [20 minutes]

6. Ongoing Business
    a. Committee Reports [20 minutes]
        i. Waste Minimization [5 minutes]
            - Single Use Plastic Carry-Out Bag Ordinance (Mr. Sutton)
        ii. Mobility [5 minutes]

- Active Transportation Plan

iii. Energy Transition [5 minutes]
- Options for Restrictions or Bans of Gasoline-Powered Leaf Blowers (Mr. Sutton)

iv. Community Engagement & Education [5 minutes]
- Communications strategies to Uplift Climate Investments in Your City (Mr. Kimbrough)

v. Natural Resources Management

b. Meeting Reports [10 minutes]
   i. SE PA SUP Coalition Oct 3 (Mr. Sutton)

7. Public Comment

8. New Business [30 minutes]
   a. Volunteer: write Annual Report for 2022
   b. Volunteer: write Annual Report for 2023
   c. Place to track ideas, that don't have current priority to be worked
   d. Report on LMT Sustainability accomplishments
   e. Social Justice: update EAC ordinance
   f. Proposed action by RISE in 2024

9. Assignment of Action Items

10. Upcoming Special Events

• Sunday, October 22, 2023	Household Hazardous Waste Collection – Registration Required
• Saturday, October 28, 2023	Anything with a Plug Electronics Recycling Event
• Thursday, November 9, 2023	MLCPRI Renewable Energy Education Session
• Saturday, November 18, 2023	Ardmore Tree Planting (sign up here)

11. Upcoming Meetings

• Wednesday, October 18, 2023	Building & Planning Committee, approx. 7:25 p.m. Finance Committee, approx. 7:28 p.m. Board of Commissioners, approx. 7:30 p.m.
• Monday, October 30, 2023	Planning Commission Meeting, approx. 7:00 p.m.
• Wednesday, November 1, 2023	Sustainability Committee Meeting, time TBD
• Wednesday, November 8, 2023	Building & Planning Committee, approx. 6:00 p.m.
• Tuesday, November 14, 2023	Shade Tree Commission, 7:00 p.m.
• Wednesday, November 15, 2023	Board of Commissioners, approx. 7:30 p.m.

Next EAC Meeting: Tuesday, November 28, 2023, at 7:00 p.m.

Attachments:
1. Sustainability Manager Update
2. EAC Comments on Recommended 2023-2024 Sustainability Plan Focus Areas (Draft Memo for EAC Discussion)
3. Options for Restrictions or Bans of Gasoline-Powered Leaf Blowers (Draft Memo for EAC Discussion)

Attachment 1
Sustainability Manager Update
Part A: Operations Update

Sustainability Manager Update
October 17, 2023

- Communications
  - Please limit emails that Sustainability Manager is copied on
  - Use Slack for quick communications, sharing thoughts and ideas, upcoming events, etc.
  - **Remember no deliberations via email or Slack** unless < 5 people
  - Check Slack weekly for updates and information from Staff Liaison and EAC
  - **Work through Staff Liaison for communication with other Township staff**
  - **Work through Sustainability Committee and/or staff for communication with Commissioners**
  - Do not represent yourself as an EAC member at any outside engagements unless previously discussed by the EAC and approved by the BOC and staff
- Sustainability Plan Implementation
  - Recommended 2023-2024 Sustainability Plan Focus Areas being discussed at the September 27 Sustainability Committee Meeting (Video here)
  - October 16 Sustainability Plan Launch Event
  - **Sustainability Committee meeting November 1, 2023 for Board to review projects and discuss budget needs**
  - Possible "mini launch" events at libraries and community centers through the winter.
  - Recommend EAC restructuring subcommittees to align with 2023-2024 focus areas, leading and/or participating in working groups, engaging working groups on projects
- WeConservePA EAC Network Fall Gathering
  - Saturday, October 21, 2023, 9 AM - 3:30 PM
- Active Transportation Plan
  - Webpage is being populated with updates
  - Steering Committee meeting #1 was September 13, updates discussed at the October 2 Planning Commission meeting
- Public EV Chargers
  - Township involvement in publicly-accessible EV chargers was discussed at the September 27 Sustainability Committee Meeting (Video here). Board gave green light to obtain cost estimates, evaluate locations, and solicit EAC and community feedback
- Tree Canopy
  - **Tree planting events – November 17 & 18** in Penn Valley, Ardmore/Wynnewood, Merion Botanical Park, and Bala Cynwyd. **Interested volunteers can**
    - email pennvalleycivic@gmail.com (Penn Valley),
    - fill out the form at https://forms.gle/UjcERaTmpDUVfFKX8 (Ardmore/Wynnewood), or
    - fill out the form at https://forms.gle/hG9Uv5WvuVkyFqpv6 (Bala Cynwyd)
  - More trained Tree Tenders needed in the Township
  - Tree Canopy Management Plan Request for Proposals has been advertised – **Please share with your networks!**
  - Tree Request Form added to Township website and publicized in Township newsletter and Social Media

Attachment 1
Sustainability Manager Update
Part A: Operations Update

- Plastic Bag Ordinance
    - Outreach and education needed through January 21,2024 when enforcement begins
    - Ordinance amendment discussed at the September 27 Sustainability Committee Meeting (Video here). Commissioners voted to advertise ordinance amendment. *"If the Retail Establishment provides a Compliant Bag for the purpose of carrying goods or other materials away from the point-of -sale, it shall charge the Customer a fee* ~~*in the amount*~~ *of* ***no less than*** *$0.10 per Compliant Bag. This charge shall be reflected in the sales receipt."*
- DVRPC Regional Benchmarking Initiative
    - DVRPC awarded 2 grants to support a regional benchmarking program in Southeast PA
    - DVRPC developing a regional benchmarking program and model ordinance for Southeast PA municipalities to consider
- Township Energy Transition Efforts
    - Township Engineer completing desktop reviews to support on-site solar budget discussions and site selection
    - Fleet Manager and Sustainability Manager working on a 2-year fleet transition plan
    - Township Engineer, Facilities Supervisor and Sustainability Manager working on a 10-year equipment transition plan
- Grants
    - $30,000 Clean Fuel Infrastructure (CFI) grant applied on behalf of LMT by DVRPC – expected to announce awardees in November.
    - $22,500 Alternative Fuels Incentive Grant (AFIG) awarded for 3 EVs purchased in 2022. Submitted application for AFIG funding for 5 EVs purchased in 2023.
    - $21,000 in grants expected for 3 fleet EV charging stations installed in 2022 & 2023
    - $126,000 Energy Efficiency and Conservation Block Grant formula funds are available. Expecting to use towards a solar project on Township facility.
    - DVRPC is taking the lead on the EPA Climate Pollution Reduction Grants for this region

Attachment 1
Sustainability Manager Update
Part B: Action Items for EAC

Opportunities for EAC to support Township Sustainability Initiatives

- All:
  - **Consider how EAC can align with the 2023-2024 Sustainability Plan Focus Areas**
  - Prepare content on your committee's topic area for future Township newsletters, social media, and LMTV
  - Prepare content on your committee's topic area for Township and civic associations to post on their websites
- Education and Engagement:
  - Prepare content for newsletter, social media, and LMTV
  - Prepare informational memos for the Board of Commissioners on different sustainability topics
  - Prepare presentations for EAC to give in the community about the sustainability plan
  - Register EAC to table at community events
  - Prepare recommendations for the EAC web page update
  - Prepare other "meeting in a box" concepts for 2023
  - Prepare online communications toolkit for civic associations
- Waste Minimization:
  - Support implementation of the outreach & education plan for the plastic bag ordinance
  - Develop a survey to obtain information about backyard composting rates in the Township
  - Develop outreach materials regarding backyard composting, freecycling, food waste minimization
- Natural Resources Management:
  - Support coordination amongst Tree Tenders groups and encourage people to get Tree Tender training
  - Develop a memo in support of performing a Natural Resources Inventory
  - Develop outreach materials regarding Leave the Leaves, Township yard waste composting
- Energy Transition:
  - Develop recommendations for a leaf blower ordinance
  - Support evaluating locations for public charging stations
  - Help develop materials to encourage private entities to install public charging stations
- Mobility/Sustainable Development:
  - Keep up with the Active Transportation Plan and sidewalk efforts
  - Review opportunities to incorporate more sustainability concepts in the SALDO and Zoning code
  - Develop strategic approach to reviewing codes, ordinances, and permitting processes in order to identify barriers and opportunities for sustainability

Attachment 2
EAC Comments on Recommended 2023-2024 Sustainability Plan Focus Areas
Draft Memo for EAC Discussion)

All

Pick 1-3 topics for a targeted engagement campaign in which you utilize the following tools to get the message out about each topic in 2024:

- Township newsletter
- social media
- LMTV
- Seminar/webinar (including guest speakers/technical experts)
- "presentation in a box"
- Sustainability web page
- Tabling at community events
- Library and community center pop-ups

Energy Transition Mitchel Burack, Nancy Winkler

- Energy Audit Program
- Site selection for EVSE
- EV information resources
- Electrify Everything Campaign
- Energy Transition Concierge Program
- Leaf blower ordinance
- Carbon-free new buildings & retrofits resolution (for Township buildings)
- Explore CCA and virtual PPAs

Education & Engagement Steve Kimbrough, Nancy Winkler

- Grow Sustainability Ambassadors
- Grown and organize community connections
- Establish a community outreach framework to support all working groups
- Liaison between working groups, ambassadors, and interested citizens
- Support Township Community Engagement and Targeted Stakeholder Engagement plans
- Support all working groups with community outreach efforts
- Advise and support development of Sustainability web page
- Develop surveys
- Tabling at community events
- Establish and manage a community outreach calendar

Natural Resources Management

- Comment on Tree Canopy Management Plan
- Support PHS Tree Tenders initiative
- Encourage tree planting and maintenance on private property

- Recommendations for Tree Protection Ordinances
- Recommendations for Nature-Based Climate Solutions initiative
- Research Natural Resources Inventory

Mobility/Sustainable Development

- Review past code audits
- Develop code audit methodology
- Make recommendations for code/ordinance/permit changes to encourage/incentivize sustainability
- Stay updated on Active Transportation Plan
- Promote biking and walking

Waste Minimization Dan Sutton

- Promote BYOB (Bring Your Own Bag)
- Explore circular/beneficial reuse programs
- Explore ways to reduce recycling residue rates
- Educate about waste minimization methods

Attachment 3
Options for Restrictions or Bans of Gasoline-Powered Leaf Blowers
Draft Memo for EAC Discussion

TO: Sustainability Committee of the Lower Merion Board of Commissioners
FROM: Lower Merion Environmental Advisory Council
SUBJECT: Options for Restrictions or Bans of Gasoline-Powered Leaf Blowers ("GPLB")

This memorandum first sets forth the EAC's proposed two-fold strategy for addressing the harms attributable to GPLB and then (1) traces the adverse effects of GPLB primarily, and of electric-powered leaf blowers ("EPLB") secondarily, on human health, the environment and ecology, and the quality of life in the Township; (2) spells out the existing township regulation of GPLB and the work of a recent Township working group charged with considering additional regulations; (3) summarizes regulatory initiatives in other jurisdictions; and (4) lays out the options for meeting the risks and harms caused by GPLB and details the various considerations bearing on the EAC's recommendation of a two-fold strategy of regulation and information aimed at eliminating the use of GPLB in the Township as reasonable alternatives present themselves.

I. PROPOSED MEASURES

A. Regulation

In the interest of sharply curtailing if not eliminating the several harms associated with nuisance-creating leaf blowers, without impairing sound landscape maintenance, the EAC proposes the adoption of an ordinance patterned upon regulatory measures that have been adopted for the same purpose in other jurisdictions and that contains the following elements:

1. A ban on the use within the Township of GPLB to take effect two years after the effective date of the ordinance;
2. In the two-year period immediately following the effective date, a restriction on the use of GPLB within the Township limiting their use to the spring and fall cleanup periods and to such other times as the Township may authorize to allow for post-storm cleanup;
3. Allowance of the use within the Township of EPLB year-round;
4. Continuation in force of existing code provisions that restrict the use of leaf blowers to certain days of the week and times of day.; and
5. A ban on the use within the Township of portable electric generators used in the field to recharge EPLB.

B. Informational Campaign

From an environmental and ecological standpoint, leaf blowing is a practice that does more harm than good. By informing Township residents of the detrimental consequences of leaf blowing, the Township can help bring about a shift away from landscaping practices that make heavy use of nuisance-creating leaf blowers in favor of best leaf-management practices,

including leaving leaves in place, that are more congenial to human health, the enjoyment of life, habitat preservation, and soil quality.

II. THE REASONS FOR REGULATING LEAF BLOWING AND FOR PROMOTING BEST LEAF MANAGEMENT PRACTICES[1]

A. Adverse Effects on Human Health, Enjoyment of Life, and Environmental Quality

Gasoline-powered landscaping equipment is widely used by Township residents, institutions, and commercial landscapers to remove fallen leaves, grass clippings, and other debris from lawns and other areas. The benefits of the equipment are offset by multiple serious harms that are well-documented. GPLB are polluters. They emit carcinogens, particulates that are injurious to human health, asthma sufferers in particular. Other vulnerable populations that are disproportionately affected by GPLB emissions include those over 65, pregnant women, babies and children.

As importantly if not more so, GPLB also emit greenhouse gases that contribute to global warming and account for the increased frequency of extreme weather events that are afflicting and destroying communities worldwide. How significant, in reality, are the carbon emissions associated with GPLB operation compared to other sources of greenhouse gas emissions? Edmunds.com commissioned the American Automobile Association's lab at its Automotive Research Center in Diamond Bar California, to compare emissions of a 2011 Ford F150 Raptor versus a two-stroke Echo PB-500 gasoline-powered leaf blower. According to Edmunds.com's engineering editor, "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."[2]

The noise associated with GPLB operation is a nuisance all by itself. It explains both existing code restrictions on the equipment's use and the rising tide of complaints from residents who are disturbed by the interference with their peaceful enjoyment of life in this suburban township resulting from the near-constant din of GPLB. Studies have shown that noise at the levels generated by leaf blowers can adversely affect human mental and physical health and cause permanent hearing loss.

In contrast to GPLB, EPLB have no local emissions that adversely affect the health and well-being of Lower Merion residents. As the electric grid is de-carbonized and fossil fuel-fired generating plants are decommissioned, the overall carbon footprint of EPLB will decline as well.

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[1] This section summarizes the literature pertaining to the health and environmental effects of GPLB. A more detailed account can be found in Appendix A. A bibliography of sources can be found in Appendix C.

[2] Besides their harmful emissions, leaf blowers in general degrade human health by stirring up particulates and pollen on the ground.

In addition, the high frequency noise associated with EPLB is less offensive to human health and well-being than the low-frequency noise that GPLB emit.

Most GPLBs used in the United States are powered with inefficient 2-stroke engines, housed in lightweight metal that offers little sound insulation, and run at three times the speed of an automobile engine (9000 rpm) producing a loud, monotonous sound. Commercial grade leaf blowers can be very powerful, blowing air at the speed of upwards of 155-170 MPH (the wind speed of a Category 5 hurricane). GPLB typically operate at a decibel rating of 65-77 dB-A or above. EPLB operate at a level of about 55-65 dB-A.[3]

The adverse health effects of gas-powered leaf blowers are borne not only by the community but by the landscape industry workers who use them daily, for hours at a time. In addition to being exposed to all of the adverse health effects already enumerated, the vibrations from GPLB are far greater than their electric counterparts--depending on the model, the vibrations of GPLB can be up to nine times greater the vibrations of EPLB.

B. Adverse Effects on Township Ecology

GPLB technology has helped advance a landscaping aesthetic of pristine lawns and walkways. From a strictly environmental perspective, however, leaving whole leaves in beds or mulch piles is beneficial and a much superior leaf management practice. The leaves serve to protect our rapidly declining insect populations and improve soil quality. Leaf blowers, on the other hand, damage soils and kill beneficial insects both indirectly by removing leaf litter in which insects overwinter and directly by the force of the blower output. Warning of an insect Armageddon, the German government cautioned in 2019 that leaf blowers should not be used unless absolutely necessary.

The "Healthy Yards" and "Leave the Leaves" movements promoted by the Xerces Society for Invertebrate Conservation and many other environmental organizations advocate that leaves be left where they fall if possible, and if not, raked into beds.[4] This allows pollinators and other beneficial insects to have some of the habitat they need to successfully overwinter and should help stem the decline in insect population, which ranks as a major global environmental crisis. In addition, leaving the leaves enhances soil health and correspondingly, plant health. The

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[3] A-weighted decibel (dB-A or dB(A)) is an expression of the relative loudness of sounds as perceived by the human ear from 50 feet away. A 3 dB difference is noticeable to the human ear; a difference of 10 dB less reduces the perceived sound by 50% and a difference of 10 dB more doubles the perceived sound.

A-weighting gives more value to frequencies in the middle of human hearing and less value to frequencies at the edges as compared to a flat audio decibel measurement. A-weighting is the standard for determining hearing damage and noise pollution. Some studies assert that decibel level is an inadequate measure of impact on humans due to the low frequency at which GPLB sounds travel. The low frequency sound waves of GPLB can go through windows 800 feet away.

[4] "leave the leaves"

Healthy Yards movement goes beyond "leave the leaves" and advocates for more sustainable landscaping practices.

While we are mindful of the prevailing popular fashion preference for pristine lawns, concern for human health and the environment calls into question the wisdom of using leaf blowers on matted wet leaves and picking up every shred of leaves from our lawns. These standards are relatively new and thus dictate the need for extreme power.

III. LEAF BLOWING IN LOWER MERION TOWNSHIP

Leaf blowers are used year-round in the Township, with heaviest usage in the spring and fall. They are used by both commercial landscaping companies and by property owners themselves. In addition to being used for spring cleanup and leaf collection in both fall and spring, blowers may be used in lieu of sweeping or raking and for cleaning gutters.

Commercial landscaping companies almost exclusively use two-stroke GPLBs. Two-stroke engines are highly polluting, very energy-inefficient and excessively loud. (Most professional grade *mowers* are four stroke – still loud and polluting but less so than GPLB). Complaints by Lower Merion residents about leaf blowers are legion. Many deem them to be a neighborhood nuisance and have called for a ban or sharper restrictions on their use.

A. Township Code Provisions Applicable to Leaf Blowers

Chapter 105 of the Township Code: Noise and Exterior Lighting makes it unlawful for any person to produce excessive noise, measured by decibel level, but exempts from the prohibition noise produced by landscaping on specified days and at specified times. That is, landscaping equipment may produce noise that is otherwise deemed excessive during the hours of 8 a.m. to 6 p.m., Monday to Friday, and between the hours of 9 a.m. and 6 p.m., Saturday and Sunday. Between the hours of 6 p.m. and 8 p.m., Monday to Friday, excessive noise produced by landscaping is also allowed subject to this limitation: if the noise exceeds otherwise applicable decibel limits, then only one piece of equipment may be operated on the property at such times.[5]

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[5] The exemption for landscaping-generated noise is provided by Section 105-6, which reads, in relevant part, as follows:

> (4) Noises created by . . . maintenance of any . . . property, including landscaping, shall be exempt during the times as provided below:
>
> (a) During the hours of 8:00 a.m. to 6:00 p.m., Monday to Friday, and during the hours of 9:00 a.m. to 6:00 p.m., Saturday and Sunday, and federal holidays:
>
> [1] Monday through Friday between the hours of 6:00 p.m. and 8:00 p.m., a maximum of one piece of landscaping equipment exceeding the decibel limits in §**105-3** may operate. If there is more than

Parenthetically, as enforcement of the ordinance requires measurement of decibel levels by township staff using sound equipment, enforcement is impractical.

B. Gas-Powered Landscaping Equipment Working Group

A working group of Lower Merion Commissioners, staff and a then-EAC member met in 2021 to research potential options for further restrictions or bans of gas-powered leaf blowers.[6] The Working Group solicited feedback from the Township Departments of Public Works and Parks and Recreation and from private landscaping companies operating in the Township. An intern was engaged to research and create a database of municipal regulations of leaf blowers in the United States.

The issues that chiefly occupied the Working Group concerned the cost and functionality of non-fossil fuel alternatives to GPLB. Although this memorandum is informed by the Working Group's findings, it also draws heavily upon the legislative initiatives of other municipalities as well as further research conducted by the EAC in the preparation of the memorandum. A summary of the Working Group's findings is provided in Appendix A.

C. Township Equipment

Any regulation of the private sector's practices must take into account the Township's own practices; behavior that the Township cannot model is seldom fit to be mandated. Conversely, behavior that the public interest requires of the private sector is also required of the public sector. The EAC understands that the Township's Parks and Recreation Department currently uses GPLB and EPLB in performing its maintenance activities. The EAC welcomes input from Parks and Recreation and/or Public Works as to plans currently in place or in contemplation for transitioning to EPLB exclusively.

IV. LEAF BLOWER REGULATIONS IN OTHER JURISDICTIONS AND OPTIONS FOR LOWER MERION

A modest number of states and municipalities have thus far enacted outright bans on GPLB. These include California, which has banned the *sale* of GPLB starting in 2024; the District

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one piece of landscaping equipment operating during these hours and the decibel limit exceeds the decibel limits established in §**105-3**, the use of this equipment is in violation of this exception.

[6] The Working Group considered and rejected, at least for present purposes, expanding the regulation of all gas-powered landscaping equipment, including mowers.

of Columbia which in 2018 banned the use of GPLB entirely starting in January 2022; Montgomery County MD which banned GPLB in 2023 with an effective date of 2024 and the City of White Plains New York, which has phased in a total ban of GPLB starting in 2023. A Lower Merion Township intern identified over 170 municipal leaf blower regulations falling into several categories. The EAC has also reviewed other sources to identify municipal bans. A majority of the regulations resemble Lower Merion's existing time-of-day and day-of-week noise regulations. Other regulations are both more aggressive and nuanced in attacking the nuisance posed by GPLB. The options considered by the EAC that draw from those regulations include:

Option 1: Seasonal ban of GPLB and/or EPLB. Restrict the days of the year GPLB and EPLB leaf blowers may be used to spring and fall clean-up periods. Two typical approaches are a ban during summer – June 1- September 30 or limiting use to a several-month period in spring and fall. According to one study, 47 municipalities currently have seasonal GPLB bans in effect, and one municipality has enacted a seasonal ban that applies to both GPLB and EPLB.

Option 2. Ban all leaf blowers year-round. This option represents the broadest attack on nuisance leaf blowers--and the most controversial. As noted above, six municipalities have banned both EPLBs and GPLBs.

Option 3: Ban all GPLB. Allow year-round usage of EPLB. These bans typically are phased in 1-4 years after passage. This addresses the air pollution concerns and reduces the adverse noise impacts but does not eliminate it. In addition to the District of Columbia the Quiet Clean Alliance identifies 51 municipalities that have banned GPLB year-round; of those 51, five have extended the ban to other landscaping equipment of varying kinds. The Quiet Clean Alliance identifies 11 additional municipalities that have a year-round ban on GPLB but provide some exemptions. The exempted entities vary widely and are different in each case. The exemptions seem to be tailored to very specific issues in each municipality. Finally, there are five municipalities that have passed bans that are not yet in effect.

Option 4. Ban all GPLB and impose a Seasonal Ban on EPLB. This option outlaws the use of GPLB after a phase-in period and restricts the days of the year EPLB leaf blowers may be used to spring and fall cleanup periods. We have identified at least one municipality that has implemented this type of regulation.

The EAC recommends that Lower Merion adopt Option 4 as that which most reasonably balances harm reduction with consumer demands. Our recommendation has taken into consideration the following considerations and potential additional or alternative provisions:

A. Phase-in period before effective date:

Providing a two-year period between adoption and effective date of the ordinance allows time for commercial landscaping companies to acquire EPLBs and to develop methods for their use, safety protocols, recharging facilities and the communication of new fees and protocols with customers. Besides mitigating any adverse economic impact on commercial operators, the notice period will afford the Township the time necessary to educate residents about the ban and the rationale for it.

The Working Group suggested that commercial landscapers should be given a longer lead time (several years) compared to residential users but that could be sped up with buyback or incentive programs. (see below for discussion of buy-back and incentive programs).

B. Limit the number of leaf blowers in use at the same time on a single property

This is a feature that is not incorporated in the EAC's recommended regulation but has merit. Approaches to limiting the numbers of leaf blowers in use include:

1. Prohibit the use of more than one gas or electric-powered landscaping equipment at a time on any one property.
2. Limit the number of leaf blowers allowed to operate simultaneously on a property based on the property's size. For example: one leaf blower allowed on properties < 1/2 acre; 2 leaf blowers on properties > ½ acre.
3. Limit the amount of time a leaf blower may be used on a property to ½ hour for lots of ½ acre or less, 1 hour for lots of ½-1 acre and so on.

C. Apply the ban first to smaller properties

A ban could be phased in by having it apply in the first instance to homeowners alone and only thereafter to larger areas with more demanding landscaping needs such as shopping centers, Township parks, school properties, cemeteries, and golf courses.

D. Modify Time- and Day-of-Use Restrictions to Differentiate Between GPLB and EPLB

Proponents of EPLB point out that some EPLB are sufficiently quiet that different time and day of use standards might apply. Schools might benefit if they could be used earlier in the morning or later in the evening than GPLB.

E. Exemptions

With the notable exception of the District of Columbia, many municipal bans exempt golf courses and other large properties, public and private.

F. Battery Recycling and Safety

While battery-powered leaf blowers are preferable to gas-powered leaf blowers, there are environmental and safety concerns associated with large-scale adoption of battery-operated landscaping equipment. The Township should look into the means for recycling lithium batteries to better ensure safe and proper disposal.

Fires stemming from battery-powered landscaping equipment are rare, but they have occurred. Fire Departments and businesses should be familiar with lithium battery fire prevention and extinguishment.

G. Financial Incentives

Under current market conditions, the upfront cost of battery-operated blowers compared to gas-powered equipment may create a disproportionate burden on low-income residents and small landscaping businesses. For this reason, buy-back programs and other financial incentives merit consideration in furtherance of the interest in equitable sustainability.

Various governmental organizations across the country have used different funding mechanisms for buy-back programs including:

1) Funding mechanisms

- Regional rebate programs have used grant monies in the past to facilitate trade-in of similar types of lawncare equipment (such as the EPA grant for the Diesel Emissions Reductions Act),
- In the absence of regional grants, municipalities could allocate money to rebate programs their jurisdiction or through regional partnerships.

2) Eligible equipment

- A “best practice” from existing rebate programs requires evidence that new equipment meets the most recently updated EPA standards for allowable air and noise emissions levels.
- Some existing programs partner with garden centers or hardware stores to provide vouchers to purchase alternative equipment at lower cost.
- Equipment eligible for rebates can vary from leaf blowers only to various types of gas-powered lawn equipment such as lawn mowers
- Eligible rebate participants may be low income and small contractors who may find it more difficult to absorb new costs than large landscaping operations.
- In California, the South Coast Air Quality Management District provided funding for outreach and education of small minority-owned businesses, and for substantial subsidies (70% of retail price) to offset the upfront cost of commercial battery electric toolkits (tool plus 2 – 3 batteries and chargers per tool).

- While some programs are for residential equipment replacements only, others provide incentives to landscaping companies who are either based in the community or do business in the community.

3) Retired equipment turn-in required in subsidy programs

- A "best practice" of subsidy programs is to require the retirement of gas-powered equipment with proof of destruction or by facilitating a turn-in program to ensure such equipment is not repurposed.

H. Leaf Blower Technology and Market Realities

According to The American Green Zone Alliance and Quiet Communities, the cost to replace gas-powered leaf blowers with electric battery technology depends on the intensity of leaf blower usage, which, in turn, is directly correlated with the expectations of property owners. As property owners relax their demand for pristine lawns, battery-operated leaf blowers become more practical leading to lower costs of landscaping and better environmental outcomes. Hence the importance of consumer education.

The landscaping industry uses metrics of performance for leaf blower technology including the blowing force, the runtime, useful life of the equipment, and cost of purchasing the equipment. Blowing force is determined by the combination of cubic feet per minute (CFM), or volume of air that can pass through a blower's nozzle in one minute, and the miles per hour (MPH), or how fast the air moves as it leaves the mouth of the leaf blower. Runtime is determined by how long the leaf blower can run continuously without refueling (i.e., adding more gasoline or charging the battery). Useful life is determined by how many months or years the equipment and/or its components can operate before they need to be replaced.

Target values of these metrics are determined by the necessary use of the equipment, therefore comparisons of EPLB to GPLB technology should be made based on use-case scenarios. As noted above the concept of what is necessary will evolve with changed expectations and the adoption of more sustainable landscaping practices. Even without any changes in expectations, there are many use-case scenarios for which EPLB are fully adequate. There are still some use-case scenarios, however, for which ELPB performance is not yet on par with GPLB performance when considering run times.

The residential EPLB market is already strong and is growing. Landscape equipment manufacturers and the landscaping industry are in the process of developing electric-powered equipment that are functionally comparable if not fully equivalent to gasoline-powered equipment at life-cycle costs that are competitive with gasoline powered equipment. Retailers are preparing for the transition as well. For example, Home Depot announced in June of 2023 a plan (focused on push lawn mowers and hand-held landscape equipment) to have more than 85 percent of its sales of lawn mowers, leaf blowers and trimmers run on rechargeable batteries

instead of gas by the end of fiscal year 2028 — a move it estimates will reduce more than 2 million metric tons of greenhouse gases annually.

Historically, GPLBs were significantly more powerful than electric blowers. The disparity is shrinking with the development of electric battery-powered equipment. For example the EGO Commercial backpack Blower Kit is rated at 800 CPM and blows at 941 190 MPH vs the leading GPLB which is rated at 941 CFM and blows at 206 MPH.[7]

For industry leading battery-operated equipment, with battery backpack, the tool will generally operate for up to one hour and ten minutes on maximum power (setting most likely used during fall leaf clean-up). This requires a substantial back-up battery supply for each blower in use by a landscape company. It is more costly to operate battery powered than gasoline powered leaf blowers.

I. Leaf Blower Cost Comparison: Importance of Life Cycle Cost Comparison

While the cost of purchasing the equipment is an important element of a cost analysis, a life cycle cost analysis is a better metric. A life-cycle cost analysis should include all costs to own and operate the equipment over the life of the asset including gasoline, which is a significant operating cost. The cost includes the leaf blower itself as well as any additional equipment (e.g., batteries and battery banks) that are needed to operate the equipment without interruption. A life cycle cost comparison with GPLB should also include the cost of fuel and maintenance as well as down-time.

The EAC has not yet identified any life-cycle cost analyses prepared by landscapers or any other entity in Lower Merion. An analysis prepared by The Coalition for a Healthy Safe Environment, a proponent of banning GPLB, concludes that the cross-over point where the ongoing costs of fuel and maintenance for an entry-level commercial GPLB vs similar EPLB is approximately between 10 and 20 months depending on certain assumptions.[8] According to the study, the cost of gasoline can be upwards of $5,000 annually.

CONCLUSION

GPLB are a chronic nuisance and public health hazard. GPLB may seem to some like a transient annoyance and minor nuisance, but they pose a serious threat to public health and the environment. As the Township makes the transition to clean renewable energy, it needs to consider whether and to what extent it should regulate fossil fuel-powered devices such as GPLB that emit greenhouse gases into the atmosphere. The case for regulating GPLB is

[7] Final Leaf Blower Regional Working Group Report, October 2022 representing 15 municipalities immediately north of the City of Chicago and the Illinois Landscaping Contractor's Association.

[8] Their report was published in 2022.

heightened by the fact that: (1) they are the noisiest and most polluting types of landscaping equipment; (2 the technology for commercial grade electric powered blowers is further along than it is for other commercial grade lawn equipment; (3) residents are already adopting EPLBs; and (4) the use of leaf blowers for non-essential tasks (such as blowing grass clippings) can be reduced with consumer education and awareness. Regulation of GPLB will also enjoy support from the vast majority of Township residents who are plagued by the unrelenting racket. Some opposition is likely from professional landscaping companies whose concerns need to be understood and addressed.

There is a nation-wide movement to transition to electric-powered landscaping equipment. Landscape companies and municipalities that are transitioning to EPLB have done so using a combination of different techniques such as on-site leaf composting and leaving leaves in beds to address drawbacks EPLB may pose in these large settings. The Township's 2023 Sustainability Plan calls for the Township to transition its own operations away from using fossil fuel-powered machines and equipment and for the Township to facilitate the transition for the entire Lower Merion community as feasible. Transitioning from GPLB to EPLB as soon as feasible is a small but timely and appropriate step towards ending the use of fossil fuels where there are reasonable alternatives.

Change is a challenge, but if the reasons for change are marshalled effectively, and there is opportunity for public debate and discussion, the Township and its institutions, homeowners and landscapers alike will come to accept two things: that leaf blowers powered by fossil fuels have no place in a forward-looking community committed to sustainable practices; and that best landscaping practices are worthy of adoption to protect and preserve the Townships' natural resources.

APPENDIX A: ADDITIONAL REASONS TO BAN LEAF BLOWERS AND SPECIFICALLY GAS-POWERED LEAF BLOWERS

Human Health Impacts

There is a substantial amount of literature linking the types of pollutants and noise emitted by GPLB to adverse human health impacts. Some links are provided below addressing various identified human health impacts (source QC/PDX)

1. The **EPA** has shown that leaf blowers and other gas powered lawn and garden equipment expose workers and the public to high levels of toxic and carcinogenic emissions such as benzene, butadiene, formaldehyde and fine particulates.
2. **Children** and the elderly are particularly vulnerable to the dust and toxic emissions created by gas blowers. **Animals, pets and wildlife** are also vulnerable to the dust, fine particulates and extreme noise.
3. The **American Lung Association**, **American Heart Association**, **World Health Organization** and the **Center for Disease Control and Prevention** all report on the

dangerous health risks associated with exposure to these types of emissions including cancer, lung disease, respiratory illnesses and **dementia**.

4. Gas blowers produce high levels of noise which have been shown to pose serious health risks including **hearing loss**, **hypertension** and **productivity loss**.
5. Noise generated from leaf blowers has been shown to **negatively impact cognitive development in children.**

Air Pollution Emissions:

Most GPLB have two stroke engines, which have inefficient combustion and are highly polluting. Two stroke engines are more polluting than the heavier, costlier but more efficient four stroke engines. The first four main findings of a study of Gas Powered Lawn and Garden Equipment (GLGE) by Jamie L Banks, PhD, MS, Quiet Communities, Inc. and Robert McConnell, Environmental Engineer, US Environmental Protection Agency, Region 1 based on a study of the five most populous states using the (US EPA's off road air emissions model Texas, Florida, Illinois and the state of California's model (for California) are:

1) GLGE is a prevalent source of toxic and carcinogenic emissions;

2) GLGE contributes substantially to nonroad emissions of benzene,1,3 butadiene, formaldehyde, CO, and fine PM (particulate matter);

3) GLME accounts for a disproportionately large share of VOC and fine PM emissions;

4) 2-stroke engines account for most fine PM emissions from GLME;

Noise Pollution

According to the American Green Zone Alliance, an organization that promotes zero emissions landscape care, In its report to the District of Columbia regarding their then proposed ban on GPLE, ARUP (global engineering and design consultants) found:

"Arup tested 7 commonly used leaf blowers, 3 gas and 4 battery powered, to help answer the question of what makes which type have more noise impact. The following written statement summarizes the testing procedure, results, and oral testimony presented by Arup to the D.C. Council's Committee of the Whole on July 2, 2018.

In summary Arup's testing indicates:

- *The sound characteristics of gas leaf blowers measured have a significantly greater low frequency sound component in comparison to battery leaf blowers measured.*

- *The low frequency sound energy of the gas leaf blowers measured transmits more readily over longer distances making them more readily audible and of greater noise impact to the community.*
- *The low frequency sound energy of gas leaf blowers measured transmits more easily through home windows and glass doors, meaning they sound louder indoors than the battery leaf blowers measured.*

For a deeper dive into the impacts of GPLB sound on humans see: Sound Report from EPA Region 1 and Journal of Environmental and Toxicological Studies, Characteristics of Lawn and Garden Equipment Sound: A Community Pilot Study
https://sciforschenonline.org/journals/environmental-toxicological-studies/JETS-1-106.php

APPENDIX B: Case Study: Washington DC Ban

Washington DC passed a ban on the use of gasoline powered leaf blowers in the summer of 2018. It provided a three and a half year period before its effective date of January 1, 2022 to allow residents and commercial landscapers to prepare for the change. The Act prohibits the use of gasoline-powered leaf blowers in the District of Columbia and impacts landscapers who do business in the District, and residents who own gasoline-powered leaf blowers. The leaf blower ban applies to all property in the District of Columbia except for property owned by the Federal government of the United State. Impacted properties include foreign embassies unless they are located on land owned by the Federal government. The Act did not provide for any seasonal restrictions on GPLB and either during the three-and-a-half-year period either prior to or after its effective date.

The District used the 3 ½ year period prior to implementation to educate residents, property owners and the landscaping industry.

Companies or individuals that now use gasoline-powered leaf blowers in the District are subject to fines of up to $500 for each offense. Unlike the prior law which required noise readings, potential violations may be reported by any person who observes a gas-powered leaf blower in use in the District with appropriate evidence being provided to support the claim. Violation of this law can be reported by submitting the complaint online using the Consumer Complaint Form. The complaint must include:

- The name of the company or individual alleged to have used a gas-powered leaf blower
- The location of the alleged violation
- The date and time of the alleged violation
- Any additional identifying information regarding the use of the gas-powered leaf blower

The complaint form must be submitted within seven (7) days of the alleged violation. All complaints must be signed before any enforcement action will be accepted or an investigation is initiated. Photographic and recorded (video and audio) evidence in support of these citations may be submitted using the form but is not required.

Investigations into use of a gas-powered leaf blower may take up to 30 business days to be completed. The act also requires retailers of gasoline-powered leaf blowers to provide conspicuous notice that those leaf blowers may not be used in the District.

Issues since implementation: A web search of news sites does not reveal significant problems with implementation.

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Appendix D: **Reactions and Concerns Identified by the Lower Merion Working Group in 2021**

In general, there was support for noise restrictions and time-of-year restrictions but not restrictions during heavy leaf season, and that it could be for multiple types of equipment not just blowers. There seemed to be agreement that commercial landscapers should be given a

longer lead time (several years) compared to residential users but that could be sped up with buyback or incentive programs.

- Township staff uses electric equipment in many places where feasible and continues incorporating new electric equipment as it becomes suitable for their needs.

- Landscapers and the DPW expressed concern that technology for EPLE is not ready for commercial landscaping operations. The important specifications that matter for commercial blowers are: flow rate or air volume at nozzle, measured in cfm, which dictates how strong the air blows out and therefore the ability to blow things like heavy leaves in the fall; and battery runtime which dictates how long they can work without stopping to charge or how many batteries they need to have on hand per crewmember to get a full day of work done. [Right now both of those are sub-par compared to the gas version.]

- Cost: Landscapers claim it is more expensive and time-consuming to use electric equipment and that cost will be passed on to the customer. Landscapers raised concerns of battery cost especially if you need several to get through 10-12 hours of work), uncertainty of battery life (years or number of operating hours the battery lasts), cost to replace the battery, cost to purchase battery banks to charge the batteries overnight, batteries are not interchangeable between brands, and the fact that even the same brand will frequently change its battery making the blower obsolete after a few years.

- Noise: Landscapers claimed the sound pressure rating on electric commercial blowers is often as much as 20 db higher than gas blowers.

- Commercial landscaping industry is very supportive of automatic electric-powered lawn mowers - Terren offered to demo one for the Township.