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**Board of Health Advisory Regarding Leaf blowers and Other Lawn Care
Power Tools**

Whereas:

The Swampscott Board of Health recognizes the need for home owners and landscapers to use power tools for the care of outdoor properties. Among the power tools most commonly used, lawn mowers, trimmers, and leaf blowers have become the most popular. When gas-powered, these machines are loud and polluting. The leaf blower is the worst offender. The EPA has determined that sound above 70 decibels is a health hazard (1), and most gas-powered leaf blowers come close to or exceed this value even at a distance of 50 feet.

The health consequences of air pollution are also a cause of great concern. Most gas-powered leaf blowers and weed trimmers are 2-stroke engines, which burn a mixture of gasoline and oil, and are remarkably inefficient at fuel combustion. They emit high levels of nitrous oxide (NO), hydrocarbons (HC), and carbon monoxide (CO). According to the California Air Resources Board (2), these engines emit 499 times more HC, 49 times more particulates, and 26 times more carbon monoxide than an average car. With wind speeds exceeding 180 MPH, mold and fungal spores, weed seeds, pollen, lawn pesticides, and animal feces are blown into the air that we breathe, staying aloft for hours to even days. Our children are particularly vulnerable with their small but rapidly growing bodies, and because they are most likely to be playing outdoors.

The lead article in the March 5, 2015 New England Journal of Medicine (WJ Gauderman, *Association of Improved Air Quality with Lung Development in Children*) reports results of the Children's Health Study, which observed the lung function of children living in the Los Angeles area, as air pollution dropped from 1994 through 2011 due to strict regulations on emissions from cars, businesses, and leaf blowers. Result: children's lung development and function was significantly better in the children living with less pollution. Follow-up showed a high correlation between the lung function as children, and the lung function later in life (3).

An editorial by DW Dockery and JH Ware, from the Department of Environmental Health and Biostatistics, Harvard School of Public Health, commenting on this study (4), concluded:

Some have argued that the substantial improvements in air quality over the past 40 years are sufficient to protect public health and that there is little evidence to support more stringent standards. However, the current report and other studies suggest that further improvement in air quality may have beneficial public health effects.....These new observational studies often show that there are health benefits associated with improvements in air quality even when the pollution levels are within a range previously thought to be safe.

The city of Claremont, CA after deciding to not use leaf blowers in the maintenance of city property, quantified the increase in workload using rakes and brooms as 1/16 over using blowers, an increase of about 6% (5). Other California jurisdictions banning leaf blowers experienced no increase in cleanup-job hours.

Observation has shown that many landscape employees do not use eye, ear, and respiratory protection while using gas-powered lawn tools, putting their own health at risk.

Electric and battery-powered tools are quieter, safer, and locally at least, non-polluting. Most electric or battery-powered leaf blowers have lower wind speeds than their gas-powered counterparts, blowing less dust, ground particles and chemicals into the air. Most Swampscott homes have relatively small lots that would be very amenable to battery-powered lawn mowers. Modern battery technology allows a lawn mower to function for up to an hour.

Therefore the Board of Health recommends the following action:

- 1. Homeowners should voluntarily take the lead to restrict the use of all 2-stroke engines on their properties, especially during the summer months. This would include most gas-powered trimmers and leaf-blowers.*
- 2. Have a pre-season discussion with your landscaper if you use one, and urge them to refrain from using 2-stroke gas-powered engines on your property, except perhaps in the early spring and late fall, if no other practical choices are available for spring clean-up and the collection of autumn leaves.*
- 3. If you use a landscaper, urge that: a) They use battery-powered or electric power equipment whenever possible. b) If a leaf-blower is used, the lowest power setting should be used. c) Every employee using these power tools should be required to protect themselves with proper eye, ear, and respiratory protection.*
- 4. The next time a homeowner purchases lawn and garden power equipment, including lawn mowers, strongly consider electric or battery-powered options. For most properties in Swampscott, these will function equally well, will be much quieter, and will not be polluting to your home and neighborhood.*
- 5. Begin a grass-roots effort in your neighborhood, to make it quieter and safer in the warmer months. Talk with your family and your neighbors. Be the first on your street to go without gasoline-powered equipment, and demonstrate how effective and quiet lawn care can be.*

References:

- (1) Information on levels of environmental noise requisite to protect public health and welfare with an adequate margin of safety (EPA/ONAC Report 550/9-74-004). U.S. Environmental Protection Agency. Washington, DC, 1974. Available at: <http://www.nonoise.org/library/levels.htm> ./ Accessed January 6, 2007.
- (2) California Air Resources Board "A Report to the California Legislature on the Potential Health and Environmental Impacts of Leaf Blowers" February 2000.
- (3) N Engl J Med 2015; 372:905-913 [March 5, 2015](#) DOI: 10.1056/NEJMoa1414123
- (4) N Engl J Med 2015; 372:970-972 [March 5, 2015](#) DOI: 10.1056/NEJMe1415785
- (5) <http://www.independent.com/news/2008/oct/23/leaf-blowers-legacy/>