

POLICY BRIEF

To: Barrington Town Council

CC: Phil Hervey Town, Manager & Teresa Crean, Planning Director

From: Magnus Thorsson, Chair Resilience & Energy Committee

Date: 07/27/23

RE: Actions to mitigate noise pollution for health and wellness of Barrington.

At the July meeting, the R&E committee unanimously voted to recommend actions to mitigate the harmful impacts of small off-road engine noise on residents, children, and the elderly.

Motion was made to recommend that TC enforce existing ordinances and enact strategies to phase out the use of small off-road engines (SORE) by January 1, 2027; in a cost-effective and technologically feasible way, establishing goals to control local noise pollution; and identify actions to meet those goals.

Topic Summary: Safeguarding taxpayer health and wellbeing by addressing the deleterious effect of noise pollution from SORE. SORE includes off-road spark-ignition gasoline engines that produce 25 horsepower or less. The small engines are designed to operate at high rpm producing a loud, monotonous noise that causes damage to health including hearing loss, cardiovascular morbidity, and mortality¹.

Noise pollution is any harmful or annoying noise that interferes with normal activities such as sleeping, conversation, or disrupts or diminishes one's quality of life. SOREs produce low-frequency, wall-penetrating sound, at levels as high as 120 dB endangering the health and wellbeing of residents².

¹EPA <https://www.epa.gov/clean-air-act-overview/clean-air-act-title-iv-noise-pollution#:~:text=Noise%20pollution%20adversely%20affects%20the,sleep%20disruption%2C%20and%20lost%20productivity>

² NIH Impacts of Low Frequency Noise Exposure on Well-Being.
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6122264/>

Town enacted a noise ordinance in 2003 to limit excessive noise³. The ordinance stated that “noise pollution unnecessarily jeopardizes the public health, safety and welfare and degrades the quality of life”. The permitted level of noise was set at 65 dB with exceptions given to “certain noise-producing equipment” deemed necessary for the quality of aesthetic life and maintenance requirements. The exception was allowed due to the lack of alternatives to SORE in the early 2000’s. Exponential advances in electric technology have now eliminated the hardship of relying on 2-stroke engines. There is scant justification to continue to invest in harmful and costly SOREs.

Recommendations

The following seven recommendations under the purview of the R&E committee were reviewed and unanimously approved as presented here.

1. Direct Town Manager to explore additional funding from State, Federal and philanthropic sources to augment taxpayer contribution of \$25,000 for SORE buy-back-program to be continued.
2. Develop a plan to transition DPW grounds maintenance equipment to battery electric over the next three years with clear and detailed goals and annual progress report.
3. Fund a pilot to purchase suitable string trimmer and blower to test with DPW. Cost not to exceed \$2,000.00 including sufficient batteries for 8-hour operation.
4. By January 1, 2026, the Town and contractors operating in Barrington will have to phase out the use of SORE and comply with the 70 dB maximum allowable noise pollution.
5. By January 1, 2027, residents and businesses must comply with a 70 dB noise ordinance.
6. Amend the noise ordinance exceptions noted in section H, “*The emission of sound relative to permitted construction, demolition, and normal maintenance activities, such as the use of power tools, lawn mowing, leaf blowing, tree cutting, and the like, from 7:00 a.m. to 9:00 p.m.*”
7. **Proposed exception:** Emission of noise relative to property maintenance using equipment with an operating range **exceeding 70 dB**, lawn mowing, leaf blowing, tree cutting, and the like, **will be permitted only** between the hours of 9:00AM – 5:00 PM after January 1, 2024. Seasonal ban on leaf blowers and string trimmers to be in effect from May 15 through September 30 and from December 15 through March 15 annually on any powered equipment above 70 dB.

³ Town of Barrington <https://ecode360.com/7119913>

What constitutes noise?

Sound is measured in decibels (dB). CDC reports that whisper is about 30 dB, normal conversation is about 60 dB, and a motorcycle engine running is about 95 dB. Noise above 70 dB over a prolonged period may start to damage your hearing. Loud noise above 120 dB can cause immediate harm to your ears⁴.

SORE cause harmful noise pollution.

SORE operate at a noise level ranging from 88-101.3 dB exceeding limits set by the US Department of Labor and OSHA. The small engines produce a higher level of noise pollution relative to size as they are not subject to nearly as much regulation as larger engines. SORE 2-stroke engines are especially harmful because they do not fully combust the gasoline used to run them, resulting also in high levels of particulate emissions, increased smog, and other negative health consequences⁵. Roughly 170 municipalities in the US have enacted some form of restriction on the use of SORE⁶.

Legislation is already being considered by the RI House bill 5549, which mandates that by January 1, 2025, all lawn care devices sold in the state have zero emissions and that by January 1, 2028, all motorized equipment would have to be zero emissions. Town leadership is well served to be proactive in transition to available and cost-effective electric equipment that is conformant with Town ordinances, meets healthy noise levels and is financially prudent.

Technological revolution.

In the twenty years since the noise ordinance was approved there have been great advances in electric-motor and battery technology. The learning curve of innovation has advanced performance and brought costs down. Furthermore, the scaling up of production has resulted in increased power and performance, extended runtime, and increased efficiency of electric equipment at a lower operating cost.

⁴CDChttps://www.cdc.gov/nceh/hearing_loss/what_noises_cause_hearing_loss.html#:~:text=Sound%20is%20measured%20in%20decibels,immediate%20harm%20to%20your%20ears.

⁵ California Air Resource Board. Small Off-Road Engines.

<https://ww2.arb.ca.gov/our-work/programs/small-off-road-engines-sore>

⁶ Pollock, C., Sparks, G., & Banks, J. L. (2018). Lawn and garden equipment sound: A comparison of gas and battery electric equipment. *J. Environ. Toxicol. Stud.*, 3(1).

Despite the significant upfront investment, commercial landscapers and municipal operators stand to benefit from low emissions battery-electric equipment. Cost comparison based on manufactures revealed the potential operating savings of up to \$5,000 per year, per crew including mower, string-trimmer, edger, and leaf-blower. State and federal incentives for capital investments are available, making the transition to electric a financially wise choice.

Brown University has begun to transition their field maintenance crew operations to electric to abate local noise and air pollution. Brown University's College Hill campus is 146 acres and includes: 76 acres of athletic fields and campus turf; 6.5 acres of shrubs and beds; 13 acres of parking lots; 11 acres of sidewalks; and two green roofs⁷.

Grant and incentive opportunities.

Executive order, signed into law on 5/09/23 administered by OER offers resources for municipalities who: work toward a clean energy future, protect public health, and reduce emissions with a public and private sector collaboration. The expressed goal is leading by example to transition to clean energy in accordance with 2021 AoC⁸.

The fund will provide an initial advance up to a maximum of one hundred thousand dollars (\$100,000) to any city or town upon the enactment of a qualifying ordinance based on the expenditure records justifying any expenses of the city or town incurred after enactment of the qualifying ordinance. Additional reimbursement of rebates or incentives more than the initial advance shall be available within sixty (60) days of the approval of expenditure records up to a maximum of five hundred thousand dollars (\$500,000) per city or town.

⁷ Brown University <https://www.brown.edu/news/2023-06-29/electric>

⁸ RI Governor EO <https://governor.ri.gov/executive-orders/executive-order-23-06>