Position Statement on Proposal for Artificial Turf at Newton South

Newton Democratic City Committee
Climate Crisis Subcommittee
1/3/2023

As Newton residents we recognize the importance of providing all our athletes with the facilities needed to practice and complete full seasons of play for all our sports. Nonetheless, use of artificial turf raises significant health, environmental, and financial concerns. We describe these concerns here and offer an alternative natural-turf solution that we believe will meet the needs of all Newton youth athletic programs.

Health threats posed by artificial turf

Clearly, playing field quality is a key component of meeting the needs of all Newton youth athletic programs.

Artificial turf is extremely durable, which appears to make it the obvious choice if the goal is to maximize availability. However, the choice is not as clear when health risks presented by artificial turf are examined[1]. For example, studies indicate that playing on artificial turf is related to higher rates of abrasions, knee injuries, concussions, and heat illnesses. Even more concerning is the fact that artificial turf contains approximately 350 different chemicals. Many of these have not been sufficiently studied to know what risks they might pose. Of ones that have been studied, many are known to be carcinogens, neurotoxicants, reproductive toxicants, and respiratory irritants. Getting through a team's complete practice and game schedules is important, but not more so than players' short term and long-term health.

Environmental threats posed by artificial turf

In addition to immediate health risks, we are very concerned about the many environmental threats posed by artificial turf. Here we summarize some of the major environmental problems.

Artificial turf quickly contaminates nearby water with PFAS and sheds 480 lbs/year of microplastics[2]. Other contaminants from artificial turf fields that accumulate in water and soil include zinc and heavy metals, such as cadmium and lead[3]. Maintenance of artificial turf fields requires regular use of pesticides (to control bacteria, insects, etc.), disinfectants (to control body fluid spills), and water cannons (to cool excessive heat)[4, 5, 6]. Artificial turf does not handle extreme precipitation well, leading to flooding of nearby areas and rapid deterioration of the turf itself[7]. The infill for artificial turf must be replaced every year, and used turf cannot be recycled, so it generates tons of waste in landfills. Artificial turf reaches significantly higher temperatures than natural grass, contributing to urban heat island effects[8].

The Newton South fields are less than 100 feet from a wetland that is not only wildlife habitat but also regularly entered and monitored by students doing science research. Once in the wetland, it can easily leach into the groundwater.

Financial costs posed by artificial turf

Artificial turf costs more to install and maintain than natural grass[6]. Additionally, the April 2022 Final Report of the PFAS Interagency Task Force suggests that municipalities can be held responsible for cleaning up PFAS contamination[9]. Such clean up can run tens of millions of dollars[10]. Especially given the current override request, moving forward on something so costly in maintenance and in liability as artificial turf seems unwise.

Balancing the need for abundant youth recreational opportunities and for environmental sustainability will require a comprehensive, forward-looking, holistic approach.

Artificial turf fields have distinct playability advantages over natural grass fields, particularly in northern climates. They allow for extended play in both the spring, fall, and even winter seasons, they are playable again more quickly after weather events, and they can accommodate a variety of sports and athletes, including heavier adult players, without breaking down or suffering damaging wear. However, due to their emissions of PFAS “forever” chemicals and other toxins, and their nature of becoming dangerous heat sinks in hot weather—on an 80-degree day, temperature of a turf field can rise to over 115-degrees, exposing young athletes to dehydration, heat stroke, and foot blistering—they are not an acceptable long-term solution. This will be increasingly true as the climate becomes hotter. Another major problem with turf fields is that they have become a path of least resistance that has artificially exaggerated their actual advantages over natural grass fields when those grass fields are properly cared for and administered. Many reasons grass fields have fallen out of favor stem from poor management and maintenance practices and to overuse, which are man-made, solvable problems.

Fundamentally, grass playing fields are living ecosystems and must be understood and managed as such. In that way they are an apt metaphor for our greater societal need to live in a way that is more sustainable and in harmony with nature in order to help prevent the worst effects of the climate crisis. They cannot be treated like a turf field—which is essentially a piece of recreational equipment more akin to a baseball backstop or a tot lot play structure—in that they can only support a certain amount of use before they break down. And like agricultural fields, they also must be allowed to rest and regenerate periodically. But when they are properly managed and maintained, grass fields are cooler, healthier, better for the planet, and result in fewer injuries for young athletes. And with recent advances in organic field maintenance practices, they are also a clearly more sustainable path.

The good news is that sufficient playing field spaces exist in Newton—more than 30 in all—to accommodate the usage needs of school athletics, youth athletics, and public and adult recreation, even with recent developments such as the adoption of a later high school day that have put more pressure on existing field space. Unfortunately, the City of Newton has never undertaken a comprehensive study that takes into account recreational needs, available assets,

and future priorities—a glaring omission for a municipality that prides itself on prudent planning and environmental responsibility. The result for decades has been an artificial zero sum game, with various recreational constituencies competing against each other for a relatively small number of the most playable fields and a push to add more artificial turf fields despite their health risks and environmental dangers. Therefore, we are strongly recommending that instead of a miscast debate on turf vs no turf at certain fields, the city embark on a more responsible path that includes:

- A comprehensive study of the playing field needs of school sports, youth sports, camps, and public and adult recreation as well as available playing field spaces.
- The creation of a sustainable management and maintenance plan for playing fields that includes:
    - Identification of underutilized spaces and a plan to upgrade them and bring them online.
    - Field rotation plans that more evenly spread usage and wear and that allow fields to periodically rest and regenerate.
    - Field maintenance and care practices that reflect the most up to date science on maintaining healthy grass fields while minimizing or eliminating herbicide and pesticide use.
    - A longer term future plan that includes the phasing out of artificial turf fields for replacement with grass and a pilot program of at least one organic field.

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[1] Video presentation on Artificial Turf and Children's Health, 1/27/2022, https://www.healthandenvironment.org/webinars/96595, 00:45:28-1:04:07, Sarah Evans, PhD MPH, Institute for Exposomics Research, Department or Environmental Medicine and Public Health, Icahn School of Medicine at Mount Sinai

[2] Video presentation on the dangers of artificial turf for the 12/13/2022 Boston Environmental Action Summit, https://youtu.be/DXmYJTeQ0ww, 41:13 – 49:45

[3] The Partnership for Healthy Playing Surfaces, https://www.healthyplayingsurfaces.org/environment

[4] Video presentation on the dangers of artificial turf for the 12/13/2022 Boston Environmental Action Summit, https://youtu.be/DXmYJTeQ0ww, 41:13 – 49:45

[5] The Partnership for Healthy Playing Surfaces, https://www.healthyplayingsurfaces.org/environment

[6] The Partnership for Healthy Playing Surfaces, https://www.healthyplayingsurfaces.org/policy-makers

[7] Video presentation on the dangers of artificial turf for the 12/13/2022 Boston Environmental Action Summit, https://youtu.be/DXmYJTeQ0ww, 41:13 – 49:45

[8] The Partnership for Healthy Playing Surfaces, https://www.healthyplayingsurfaces.org/environment

[9] https://www.mma.org/resource/pfas-in-the-commonwealth-of-massachusetts-final-report-of-the-pfas-interagency-task-force/), p. 60

[10] Cordner et al., "The True Cost of PFAS and the Benefits of Acting Now," *Environmental Science & Technology*, p. B, https://pubs.acs.org/doi/10.1021/acs.est.1c03565