

To: Hamilton Planning Board
From: Anne Gero
Re: Athletic Campus Redevelopment Project
Date: February 24, 2024

The following are several comments in response to the following:

- Letter of Gale Associates (“Gale”) to the Planning Board, dated February 20, 2024, Re: Response to Public Comments,
- Letter of Professional Services Corporation (“PSC”) to the Planning Board, dated February 20, 2024, Re: Evaluation of the Applicant’s Response to our January 23, 2024, Peer Review of Stormwater Management for the Athletic Campus Improvements, and
- Letter of PSC to the Planning Board, dated February 20, 2024, Re: Additional Evaluation of the Athletic Campus Improvements

The Dover Amendment exempts the Athletic Field Improvement Project (the “Project”) from certain aspects of the Hamilton zoning by-laws (the “by-laws”) when land and structures are “used for educational purposes”. If such land or structures are used in a way that goes beyond what is necessary for the educational purposes of the School District, then the extent to which those uses exceed the educational uses are subject to all of the provisions of the by-laws.

A. LIGHTING

Lighting at the Project has the potential to be used in such a manner that it exceeds what is reasonable for the School District to accomplish its educational purposes.

1. Use of the Fields by Third Parties

While the School District is free to permit third parties to use the fields and can even assess fees for such use, these uses are not in furtherance of the educational purposes of the School District and therefore are not protected by the Dover Amendment. Because the proposed lights are not otherwise permitted by the by-laws and will have a highly detrimental impact on abutters, the lights should not be used for play by third parties. This would include adult recreational games and the use of the fields by other schools when Hamilton athletes are not involved.

2. Light Intensity

In addition to a lights out time, the School District should use the lights at an appropriate intensity for particular uses of the field (e.g., practices and field maintenance require less intense lighting than games). According to the lighting specifications provided by Gale, the lights will have a dimmer so that the lights can be adjusted to three different intensities. The School District should explain how it will use the intensities, and the lighting should be limited accordingly.

3. Point Sources of Light

With respect to the impact of point source of light on abutting properties, Gale states that if there were additional means of mitigating this impact then Musco Lighting already would have incorporated it into its lighting design. Such a statement from Gale is not sufficient. Gale should produce a letter from Musco regarding additional ways, if any, to further mitigate the impact of point source lighting upon abutting properties.

4. Property Boundaries/Wetlands/Buffer Zones

The School District has yet to produce illumination plans showing property boundaries, wetlands, and wetland buffer zones. This should be an easy task since all of this information is on a CAD or comparable system. Gale admits that the illumination encroaches on these areas but treats such encroachment as minor. The Planning Board and the abutters should be able to view this information, and the burden should be on the School District to show that there is no other practical way to mitigate light impact on such areas. This has not been done.

B. NOISE

1. Playing Fields

There are aspects of the sound system outlined in my initial comment letter dated February 9th (“Initial Gero Comments”) that have not been addressed.

2. Use by Third Parties

As with the field lighting, the sound system should not be used when the field is used by third parties.

C. STORM DRAINAGE

1. Proposed Drainage System

As noted in the Initial Gero Comments, artificial turf fields shed large amounts of plastic, and the Ipswich River Watershed Association (“IRWA”) recommended certain measures be taken to ensure “**long term** protection” of the drainage system.

PSC noted that under field drainage systems can fail due to total suspended solids (“TSS”) from automotive or landscape runoff. These TSS “choke the voids in the stone layers”. Without addressing the plastics issue, PSC noted that the “system should not be subject to **short term failure**”. PSC failed to address IRWA’s **long term** concerns.

2. Right to Drain onto Property of Others

Gale objects to my statement that the water draining from the artificial turf fields will be qualitatively different from that which comes from natural grass. In support of this, Gale refers to “its experience working with a toxicologist and their testing conducted on turf materials from prior projects”.

Yet, the testing results that Gale included in its Application are flawed as follows:

Act Global Turf	Tested for only 40 compounds and at a reporting limit in parts per billion (ppb) rather than the parts per trillion (ppt) that EPA is proposing for PFAS testing of drinking water. Did not test for total fluorine.
Sprinturf ¹	Tested for only 40 compounds with a reporting limit of 2-4 ppb, rather than ppt. Tested for total fluorine and found 430 parts per million.
Algonquin Regional High School	Tested for 28 compounds with a reporting limit of 35,000 ppt rather than the 4 ppt that EPA will soon be requiring for drinking water. Did not test for total fluorine.
Manchester/Essex Regional High School	Tested for 28 compounds with a reporting limit of 35,000 ppt rather than the 4 ppt that EPA will soon be requiring for drinking water. Did not test for total fluorine.

Any PFAS or other chemicals in the turf or infill will leach into the drainage and onto property of others. This should not be permitted.

D. ARTIFICIAL TURF SHOULD BE PROHIBITED

1. Artificial Turf is Not Appropriate

Gale has responded to many of my points based on “its opinion”. As stated in its Application, Gale is neither a toxicologist nor a scientist. In the Initial Gero Comments, I cited to well-known scientific studies in support of my statements.

- Health concerns re: PFAS and other chemicals
See letter of Dr. Sara Evans to the Planning Board dated January 5, 2024.
- High School Injury rates on artificial turf
The study cited in the Initial Gero Comments was done by the Washington University School of Medicine and looked at 26 different high schools. With respect to risk of injury, Gale compares the existing fields to the proposed artificial turf fields. The comparison should be to well-maintained grass fields.
- High temperature of artificial turf
The study cited in the Initial Gero Comments found greatly elevated heat readings regardless of type of infill.
- Chemicals and microplastics contaminating the environment
Gale argues that “some studies referenced [in the Initial Gero Comments] are older”. Yet, the Gearhart Letter states that, as of the date of the letter, the Ecology Center has not found any artificial turf that is PFAS-free. As for the study given to the Planning Board re: the shedding of plastic from artificial turf, it is dated June 2023.
- Contamination of drinking water supply

¹ See also the attached article from The Philadelphia Inquirer regarding the installation of several turf fields in Philadelphia. The City was told by Sprinturf that the turf would contain no PFAS and Sprinturf provided test results which supposedly supported this position. Yet, three independent experts reviewed those tests results and found them to be “flawed and inadequate”.

Gale notes that the contamination of our School Street well resulted from other sources. While this is clearly true, adding additional PFAS to the environment when private drinking water wells are nearby and to the Miles River upstream of the Town of Ipswich public drinking water supply, is not wise.

Gale refers to the Town of Hopkinton where Gale alleges Weston & Sampson determined that the turf fields did not contribute to the PFAS contamination of one of Hopkinton's drinking water wells and several private wells. According to the local Hopkinton newspaper, the Town decided not to commit resources to study possible sources of the contamination and to instead focus on remediation.² Gale should provide evidence of this finding by Weston & Sampson if Gale is to make such a statement.

Gale also worked with the Town of Manchester to replace the artificial turf at its high school. Yet, Gale failed to mention that the Lincoln Street drinking water well in Manchester which is adjacent to the turf field has elevated levels of PFAS and will require remediation when the new EPA regulations become effective.

Gale is correct that we don't know for certainty where much of the PFAS contamination is coming from, but this is not a justification for adding more to the environment especially when water supplies are at risk.

2. Grass fields will work in Hamilton

Gale responded to the hours of use reported at grass fields in Marblehead and Springfield by saying that one of the referenced facilities has "20 acres and several fields". However, the reported hours of use are for individual fields and are taken from case studies conducted by the Toxic Use Reduction Institute ("TURI") at the University of Lowell. Contrary to what Gale states, TURI notes that rest periods are not needed if fields are frequently aerated and overseeded. (The TURI case studies are cited in my original comments.)

E. IF ARTIFICIAL TURF IS PERMITTED

1. Testing of PFAS and Other Chemicals

The Application sets forth the PFAS testing specification that Gale typically uses in its bid documents. It states:

The General contractor/Turf Supplier is required to conduct 3rd party testing for the currently regulated perfluoroalkyl and polyfluoroalkyl substances (PFAS) for the turf and infill to be installed, and provide written certification that they meet the regulated PFAS limits in the installed materials or that no PFAS are detected in the products.

In response to my comments, Gale stated that the turf will be tested for PFAS "in accordance with the current State and Federal testing methods and regulations at the time of construction".

Both of these statements are insufficient. To date, PFAS regulations apply only to drinking water and only require 6 PFAS compounds to be tested. There currently are no regulations governing PFAS in artificial turf.

The science regarding the harms of PFAS and our ability to detect the presence of PFAS is developing rapidly. Today we know that there are over 12,000 PFAS compounds. Yet, tests have been developed for only about 70 of them. Please refer to the Gero Initial Comments, the Gearhart Letter and the letter from IWRA to the Planning Board dated December 12, 2023, regarding recommended testing for PFAS and other chemicals in artificial turf.

The artificial turf should be tested prior to installation, and then, as suggested by PSC, should be tested annually to provide an appropriate baseline. (The Conservation Commission only required testing of the water which comes out of the drainpipe at the edge of the softball that is designed to drain water to adjacent wetlands in the event of a 100 year storm. This is because all other water from the softball field is calculated to move downward into the ground rather than directly into the wetlands.)

The Town and the abutters should know to the extent feasible what is in the artificial turf and what is leaching from it even though such amounts/compounds aren't currently regulated.

2. Organic Infill

Any organic infill still should be tested for PFAS and other chemicals since those infill materials (ie., wood pieces, walnut shells, cork husk, etc.) frequently are treated with other chemicals.

² HopNews, Where Did the PFAS in Hopkinton's Water Come From?, March 28, 2023.

3. Supplier Take Back

There currently is no recycling of artificial turf in the United States. It's difficult and expensive to separate the turf materials, clean them, and then ship them to recycling facilities. Moreover, there is currently no market for recycled turf materials that contain PFAS and other chemicals.

Today, artificial turf is either incinerated, tossed into landfills, or stored in fields.

Gale refers to several examples of turf being recycled. Those examples are misleading at best:

- TenCate – It currently is incinerating all of its artificial turf.
- Shaw Sports – It recycles artificial turf by removing pieces of turf that are in good condition, then trimming them and selling them as smaller pieces of artificial turf for non-athletic uses. Basically, it extends the useful life of portions of a turf field for several years. It does not turn them into plastic that can be used to create other products.
- Portsmouth, NH – Gale alleges that the turf from this project “was recycled”. Today, six months after completion of the project, the removed turf remains rolled up at the edges of the playing field. (See photos.) This is undoubtedly because there is no place to send it.
- Medway – Bids have just been received for this project and no contracts have been signed. It's premature for Gale to state that the removed turf is being recycled.

Notably, Gale makes no reference to the project it just completed in Manchester. Presumably, this is because the removed turf was not recycled.