

## Reply to MVC question

Amanda Farber <amandafarber@hotmail.com>

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To: Alex Elvin <elvin@mvccommission.org>;

Good afternoon,

**I wanted to provide a response to the following question posed by the MV Commission:**

Question: Through wear and tear and UV exposure and resulting degradation, approximately what percent by weight does a turf carpet lose annually?

Answer: The answer to this question very much depends on various environmental conditions and material components. The specific system that is being proposed for Martha's Vineyard is relatively new to the market, so it is hard to say with any certainty how those particular products will hold up and how much shedding to expect year to year. That said, the microplastic degradation of synthetic turf fields has been documented and estimated by industry and environmental groups alike.

- During the 2019 Synthetic Turf Council annual meeting, an industry presentation slide (see attached) asked the question, "How do the fibers and granules escape?" It listed:

- "Washed away with rainwater"
- "Exit the pitch during maintenance activities"
- "Cling to socks and shoes"
- "Degradation"
- "Washed down internal drains"

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Many artificial turf maintenance manuals and warranties refer to "shedding" as a "normal characteristic" of artificial turf systems, particularly in the carpet's first year and/or if the carpet is not properly maintained. Sweeping and vacuuming are recommended to remove the loose fibers, but that does not capture all of the shedded material. Attached are examples from the GreenFields maintenance manual and an ActGlobal warranty (the other brand HAI originally proposed for MVRHS).

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The organization KIMO has researched microplastic pollution from artificial sports pitches, net cuttings pollution from the fishing industry, and microplastic emissions from textiles. They have estimated the loss of microplastic infill from synthetic fields at 3-5 tonnes (not applicable to the proposal you are currently evaluating), but also noted that "the figures...are conservative as they do not take into account secondary microplastics which are created from the wear and tear of the synthetic fibers making up the 'grass' part of the artificial turf. It is estimated that 5-10% of the synthetic grass fibers are degraded in this way annually – further polluting the environment." <https://www.kimointernational.org/feature/microplastic-pollution-from-artificial-grass-a-field-guide/>

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A multi-part investigative report on artificial turf fields in New Jersey documented widespread examples of plastic blades breaking down prematurely and shedding from young plastic fields. This has led to fraud lawsuits nationwide. <http://fieldturf.nj.com>

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I put together this video compilation in 2018 of failing artificial turf fields in my area which provides some additional visuals of how plastic blades break down and shed over time. Some of these fields are only a few years old, while others are approximately 10 years old. For your purposes, it's the shedding plastic grass fibers you want to pay attention to, as opposed to the synthetic infill materials. [https://youtu.be/IV-Mh\\_g0gMI](https://youtu.be/IV-Mh_g0gMI)

**In addition: I also wanted to follow-up on the responses provided by Huntress and Associates to my questions raised on December 1, 2020.** For the record, I did not receive notification that Huntress and Associates had responded to my questions prior to my oral testimony.

After reading the February 10, 2021 response, I noted Huntress and Associates were not able to produce any real-life examples of chain of custody/recycling documents from his firm's past/current projects. While presented as cutting edge, other communities have requested -- and been promised -- recycling for decades. Custom specifications alone for 100% closed loop recycling will do Martha's Vineyard no good.

*"You are correct, we have written a custom specification for MVRHS that requires 100% closed loop recycling of the turf product installed at MVRHS at the end of its useful life.... To my knowledge, this specification is unique and has not been required of other athletic field projects in the past, either through my office or those of my peers."*

Huntress and Associates also indicated that the recycling company which was originally cited as "presently being constructed" in 2019 had cancelled their plans for a US facility.

*"We included the information from Mr. Anderson in our report because we found it credible. Like you, we later learned that Re-Match cancelled their plans to build the Pennsylvania facility. I am not aware of the reason the plans were cancelled."*

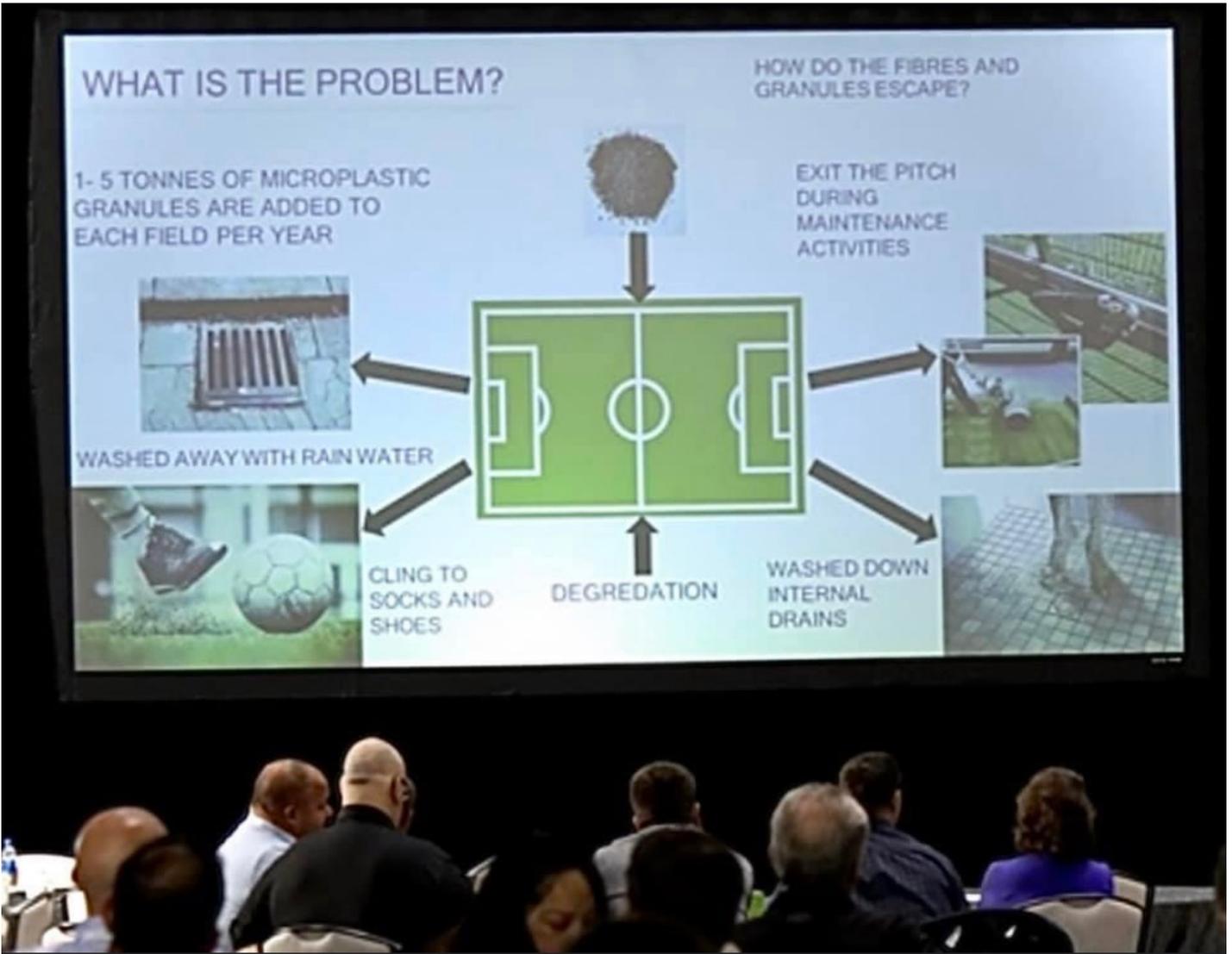
This is not the first-time synthetic turf recycling plans and promises have changed.

**Lastly, in both an earlier phone call with myself, and then in an email to Alex Elvin dated October 9, 2020, Eric van Roekel, representing the new Dutch facility GBN, indicated that while they would accept an old artificial turf field, he thinks "moving the fields across the globe makes no sense (from an environmental point of view.)"** <https://www.mvccommission.org/sites/default/files/docs/GBN%20AGR%20email%2010-9-20.pdf>

This is consistent with a November 2020 survey conducted by Sports Lab (see attached) based on responses from industry stakeholders across the globe which found that shipping full-size field carpets more than 200 miles for recycling was unacceptable from a carbon emissions standpoint.

Please let me know if you have any additional questions.

Thank you,  
Amanda Farber



2019 Synthetic Turf Council Meeting slide — "How do the fibers and granules escape?"

**Ensuring Optimal Field Performance**

In order to preserve the playability of the GreenFields system, filled and not filled, it is essential that the following are considered and subsequently avoided.

**1.1 Synthetic Turf and Infill Pollutants**  
 Improper cleaning of the field, and more importantly, poor cleaning of the sand and rubber infill material can create a negative effect on the field's playability. Failure to follow proper cleaning guidelines can add to an over compaction process within the infill of the turf system. This compaction can cause a hardening of the surface, which can create poor water permeability, inferior ball behavior, poor grip for the players footwear and possibly damage to the fibers or result in fiber loss.

- Possible pollutants:
- Airborne particles from natural rainfall or water sprinkler systems
  - Imported foreign bodies as a result of high winds
  - Plant and flower debris from seasonal climate change
  - Animal waste
  - Soil or debris transported onto the field through shoes or tires.
  - Ingredients in food and drinks including acids or sugars could influence the composition of the fibers or the quality of the infill
  - Food packaging, drinks, or general litter
  - Chewing gum can become entangled in the fiber or infill
  - Natural wear and tear of the fiber creating residue
  - Leakage of oil, fuel, or grease from mechanical maintenance equipment
  - Neglecting the maintenance schedule could allow for the growth of weeds, algae and/or moss

**1.2 Synthetic Turf and Infill Damage**  
 Damage to the system could also influence the playability characteristics and the ball behavior of the GreenFields system.

- change the specific markings/characteristics of the fiber and infill materials
- Ingredients in food or drinks including acid or sugars could influence the composition of the fibers or could influence the quality of the infill

GreenFields recommends that warning signs are attached at each entrance to the field, an example of which is given below.

**PLEASE OBSERVE**

To Ensure GreenFields Performance, Durability & Safety the Following is Prohibited:

- Metal spiked shoes
- Food, Sunflower seeds & Glass
- Chewing gum
- Smoking and fire
- Animals
- Vehicles

**GreenFields**  
 HIGH PERFORMANCE TURF

For more info call us at: 855.773.4468  
 www.greenfieldsturf.com

**NON-WARRANTED TURF SURFACE CHARACTERISTICS:**

**Appearance Retention\***

Synthetic turf surfaces will change in appearance over time. This is primarily due to foot traffic and normal wear and tear. Synthetic turf surfaces in heavy traffic areas will exhibit the most change. A good quality synthetic fiber and infill, provided it is properly maintained, will help extend the surface's appearance. The tips of the fibers in certain types of synthetic turf, over time and with use, will fibrillate, causing it to split or bloom (not applicable to monofilament fiber). This is normal and should be expected. Over the useful life of your synthetic turf surface, subtle color variations will occur due to exposure to natural sunlight. These variations are normal and to be expected.

**Crushing\***

Crushing is the compaction of the pile thickness in the synthetic turf surface due to foot traffic or repeated use or placement of heavy objects, including motorized equipment. Regular use of an AGA approved sweeper/vacuum in high traffic areas may help reduce changes in appearance caused by crushing.

**Indentations\***

Indentations will occur from placing heavy objects on the turf or repeatedly operating motorized equipment on the surface without the recommended tires or underinflated tires, thereby causing crushing, as aforementioned, or indentation damage to the sub surface. Brushing the affected area will usually restore the crushed fibers to their original position. Please review the AGA Care and Maintenance Manual for recommended load limits of motorized equipment and appropriate tire type and inflation.

**Mattling\***

Mattling is the entanglement of synthetic turf fibers and may be caused by a low infill level, or more often, improper maintenance. The improper application, maintenance (e.g. removal) of temporary or permanent painted markings can cause mattling. Residue from a spill that is not cleaned up thoroughly or not treated completely will also lead to mattling.

**Shading\***

Shading is a change in pile direction that results in an apparent change in color due to the light reflecting in different ways. Solid color turf surfaces will exhibit this more often than textured or multi-colored surfaces. This is normal. Severe cases of shading are also known as puddling or watermarking. This condition is the result of permanent pile reversal that occurs after installation. It has no known cause and is usually confined to only certain areas of an installation. Puddling or watermarking is not considered a manufacturing defect.

**Shedding\***

Shedding is a normal characteristic of synthetic turf surfaces, particularly sporting surfaces. It is more apparent in monofilament products as compared to slit filament products. Regular sweeping/vacuuming will remove most of the loose fibers during the first year of service.

**Seams\***

Seams are required in the process of installing synthetic turf surfaces. Seams do show, and with some types of surfaces seams can be more apparent. Apart from workmanship defects such as trapped fibers, excessive width or raised seams, THERE ARE NO INVISIBLE SEAMS.

\*Each of these items is characteristic of synthetic turf surfaces and would not be considered manufacturing defects.



**Question 19 – Acceptable distance**

