Dear Members of the People and Environment Recovery Board,

There have been many notable efforts to educate our city's residents about reducing, reusing, and recycling plastic products.
None of us probably think much about artificial turf except that it might be offered as an alternative for areas where it is difficult to grow grass. There might even be messaging that it is an environmentally friendly product because it uses cork or sand as the infill material as opposed to recycled tires and contains only a small amount of plastic.

What would be your impressions if I were to inform you that the product is both a health and environmental hazard and that according to neuroscientist Kathleen Michels, Ph.D., artificial turf is "...the greatest point-source of plastics in the world...bar none"?

Marketing campaigns are laden with greenwashed promises. Manufacturers of artificial turf frequently claim that their products are PFAS-free when "time and again, independent testing" has revealed those claims to be inherently misleading and there are in fact PFAS and dozens of other harmful chemicals that users of the product are exposed to.

Currently in the City of Asheville, the use of artificial turf is allowed if the product is maintained, in good condition, and does not create erosion or drainage issues. However, based on the research I have conducted on this category of products, the usage of artificial turf deserves a closer look that goes beyond its impact on stormwater.

Background Information:
In January of 2025, the NC General Assembly passed legislation (SB 19) that amends G.S. 113A-113 which determined how artificial turf is classified. With the amendment, artificial turf products were now to be excluded as an impervious surface. The implications are such that the synthetic turf products could be used more freely, bypassing stormwater regulations because a greater percentage of the newer artificial turf products now allow for some amount of drainage, reducing runoff.
However, the health of our environment is not determined solely by compliance with stormwater regulations.

The Problems:
What is of considerable concern is that plastic leachates including PFAS pass through the turf drainage holes and end up in groundwater, resulting in environmental contamination.
A 2024 study published in *Environmental Science: Nano* had already demonstrated that nanoplastic exposure will adversely impact tree physiology and impair photosynthesis. Within two months of exposure to nanoplastics, a tree could suffer ill effects. The study authors had also recommended the mapping of nanoplastic "hot spots" for those involved in urban design. Perhaps it would be prudent to reduce or eliminate this source of nanoplastics in the first place by prohibiting the use of artificial turf in urban settings.

The use of artificial turf also destroys the soil biota and traps heat which harms the tree root systems located beneath the material. A highly reputable and well-respected ISA-certified master arborist had told me that.

At the residential level, you have homeowners in tight spaces being impacted by a neighbor's use of artificial turf. Off-gassing occurs: the product is not UV resistant so it will have an accelerated breakdown process in sunlight. Furthermore, the volatile organic compounds and fumes can be held in the air for extended periods on humid days. Combined with the plastic leachates that end up in groundwater, the micro- and nanoplastic dust create quite the toxic nuisance and health hazard for humans, animals, and trees alike.

Artificial turf also forms heat islands which can give rise to environmental justice issues.

Please note the attached documents which reveal just how many chemicals can be found in synthetic turf products. With the dubious manufacturer claims of their products being plastic-free or PFAS-free because testing parameters had been set so as not to measure at the micro- or nanoparticle level, city residents and entire communities are misled into thinking that everyone is safe using the turf in their backyard, at the school where athletes are practicing on the field for entire seasons year after year, or in a public space such as the RAD Farmers Market. Children are playing on that synthetic turf and dogs are getting their feet all over the micro- and nanoplastic dust which then migrates to other areas. Due to its minuscule size, the dust can be inhaled or ingested. After it enters the bloodstream, it can be deposited in vital organs.

The amount of greenwashing that goes into the marketing of these products should be questioned. Just because mowing and watering of natural grass are no longer needed does not automatically make synthetic turf an "environmentally friendly" product. Furthermore, the absence of a crumb rubber infill does not make the product safe. Alternative infill sources such as cork and sand are *still* coated in plastic and will off-gas heavily and contaminate the environment with micro- and nanoparticulates for the entire duration of the product's lifecycle.

Our trees had been through enough after Helene. Keeping them healthy should remain a priority for our municipality and that includes protecting them from unnecessary and completely preventable micro- and nanoplastic exposure from artificial turf installations.

Some of the links below could provide you with more information on the detrimental health and environmental impacts of synthetic turf.

Links:

Webinar - Segment between 49:50 and 58:30 and discussion starting at 1:02:30 if short on time
"The True Costs of Artificial Turf: Experts Discuss Cornell University's New "PFAS-Free" Project — Beyond Plastics - Working To End Single-Use Plastic Pollution

Mount Sinai School of Medicine
Position Statement on the Use of Artificial Turf Surfaces - Institute for Exposomic Research

PFAS and Possible Link to Cancer
Vets Turf Linked to Cancer in Former Phillies | Pond Lehocky
6 Former Phillies Players Died of Cancer, Report Finds Turf Could Be to Blame

As one of the links indicates, the City of Boston has prohibited the installation of new artificial turf surfaces in the municipality. Other cities in Massachusetts, California, and Connecticut have already called for bans.
In 2025, the state of Maine passed a "three-year moratorium on the installation or reinstallation of synthetic turf" with a study on the health and environmental risks to be undertaken.

Sierra Club leader and phytochemist Neil Carman, Ph.D. had explained as a panelist in the webinar (also noted above) that as turf degrades, the microplastics cross the blood barrier into organs. He had averred, "This is very toxic material."

The PFAS content along with the polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs), plasticizers, and volatile organic compounds (VOCs) released from this product would alarm most people.

Does the City of Asheville really want this toxic plastic material adversely impacting our residential neighborhoods and public spaces?
Due to the lack of transparency that occurs in the marketing of artificial turf (with manufacturers already named as defendants in numerous lawsuits), city residents should be informed. When something is labeled "PFAS-free" but it is not, we as a community are not only the subject of deceptive trade practices but are paying with our future health and the degradation of our environment.

I just cannot imagine that people would be willing to trade future chronic disease and harm to their pets, wildlife, trees and plants along with the contamination of waterways, soil, and air for the "convenience" of a concentrated source of plastic at the daycare center, playground, athletic field, community farmer's market, or on one's lawn.

There has to be a better way.

I would appreciate your thoughts on what I have shared here. I would very much like a conversation to begin on why this completely unrecyclable product that off-gasses year after year and that allows toxic micro- and nanoparticle dust to migrate to areas far from the site of origination should belong anywhere in our neighborhoods and public places.

Feel free to reach out to me with questions.

Thank you so much for your time and consideration.

Best,
Gloria Shen