Testimony on: HB1547 - Environment - Synthetic Turf and Turf Infill -Producer Responsibility

Position: **Support**
Committee: House Economic Matters
Hearing Date: February 19, 2020
Lead Sponsor: Delegate Mary Lehman

Submitted by: Jerry Kickenson and Kathleen Michels, PhD

Regarding: **HB1547 - Environment - Synthetic Turf and Turf Infill -Producer Responsibility**, to be heard **Feb 19**, 2020 at 1 PM **SUPPORT**

We submit this testimony in support of HB1547. Tracking and producer responsibility in the form of an approved stewardship plan for responsible disposal in ways that do not contaminate air, soil and water are long overdue for the huge amount of waste generated by these short-lived, synthetic plastic and rubber waste surfaces. We have witnessed first hand the waste from our sons's and their friends school fields in Mongtomery County being sent to be stockpiled or dumped with no prior plans or regulation.

For Sports Fields the safest, healthiest most durable and sustainable surface is grass growing in native soil, a special soil mix or sand. These fields can be constructed and maintained to be durable and as continuously playable as necessary for the situation with state-of-the-art methods the right grass and materials.[1] Good drainage from the start and aeration as needed are the keys. All too often however fields are poorly constructed and poorly maintained. Instead of getting expert help and doing grass fields correctly, the stage was set for the synthetic turf industry which began indoors where the sun doesn't shine but now moved outdoors where sun and weather are the enemy of plastic. There was no plan in place or regulations to address however, the inevitable forever-waste.

Most plastic synthetic sports turf fields are a urethane backed carpet with colored plastic "blades" on top of a base of rocks. As expected, these surfaces were too hard. With the decision to dump up to 40,000 pulverized used tires on top of the plastic carpets for infill to hold the blades upright and provide some cushioning concerns were immediately raised but mostly ignored:

- the plastic carpet base and blade plastics contains toxic chemicals as plasticizers, UV inhibitors, colorants, "non-stick" PFAS chemicals and flame retardants.
- The crumbed tire waste contains myriad toxic substances, including heavy metals, benzothiazoles, polycyclic aromatic hydrocarbons, carbon black and volatile organic compounds (VOCs) such as benzene.[2] . Many of the chemicals are known carcinogens, neurotoxins or endocrine disruptors.
- Both the plastics and tires heat up to hazardously high levels. In addition, they are short-lived (7-8 years on average) and become hazardously hard after only a few years (a large proportion of DC fields needed to be closed recently due to hazardous hardness[3]).

Other infill materials such as "virgin" rubbers (a misnomer- just more synthetic polymers) and plastic pellets simply add even more "forever-waste" and plant-based infill such as cork and coconut are

[1]Examples of durable grass field management <https://growinggreengrass.net/>
<https://growinggreengrass.net/?s=rain&submit=Search>

[2] https://www.grassrootsinfo.org/syntheticturfscience.php EPA statement about Synturf and tire waste
<https://cfpub.epa.gov/si/si_public_file_download.cfm?p_download_id=524979 >

[3] http://dcist.com/2017/09/turf_30.php ⅓ of 52 synturf fields were too hard even by lenient 200 Gmax standard
D.C. Fields Fail Safety Test As A Local Debate Over Artificial Turf Begins To Heat Up BY RACHEL SADON SEP 18, 2017

available but poorly tested for durability, toxicity or head impact protection.[4] They do not appreciably decrease the heat due to the plastic carpeting.

Fields and playgrounds are unsustainable and unacceptable as 'recycling' for tire waste- **they pollute the environment while in place and last 7-10 years max, if well maintained, before needing to be landfilled and replaced with new petroleum-based surfacing**

Playgrounds (see photos attached) topped with shredded tires under a glued rubber or plastic crust layer have the same issues of heat, hardness and toxins. Children and student athletes can be exposed to these highly toxic substances in the plastic and tire dust and micro-debris through inhalation, skin absorption and accidental ingestion, all of which can easily occur during normal sports activities[5]. Children are especially sensitive and vulnerable. The surfaces are rarely tested for hardness as required even though studies indicate the synthetic rubber surfaces become too hard quickly. Heat regulations typically do not exist. The frequent disposal transfers the toxics to the communities where they are disposed.

"**Given the number of different sources for ground up rubber tires and the unique chemical components of each individual field, an absolute determination of safety (or risk) is impossible. In addition, since many of these chemicals are toxic at any level of exposure, the presence of even one of these chemicals on fields where children play should trigger a public health concern" The EPA stated** "Turf-and-rubber fields typically contain about 200,000 pounds of rubber crumbs, made from thousands of former car and truck tires that may have varying levels of hazardous substances. A single field can have "substantial variability" in its materials and in the "concentrations of contaminants," the EPA wrote in a 2009 study, listing 32 potential contaminants including arsenic, benzene, mercury and toluene**[6].** Manufacturers of synthetic turf also sometimes treat the fields with chemical flame retardants and have **admitted use of the highly toxic PFAS class of chemicals in synthetic turf carpet manufacturing**. They are probable human carcinogens[7].

There have been reports of higher than usual cases of lymphoma and leukemia among athletes, using synthetic turf fields filled with crumb rubber, especially long-time soccer goalies who spend more time in contact with the surfacing (*see reports on Amy Griffin's Cancer registry).* They are likely the proverbial canaries, on the sports fields. No federal state or local agency has been following the health over time of this new generation of children who since about 2005 are increasingly being raised on synthetic surfaces at day care and school facilities as well as recreational fields, full of known toxins. Calls are being made to establish a health agency registry to track athletes who've been diagnosed with cancer. The impact of this material upon the health of those in the communities where it is disposed of is similarly not being assessed.

Leachate from the tire crumb is also extremely toxic to aquatic organisms, as found in an number of studies (e.g. Connecticut Department of Environmental Protection (2010) Artificial Turf Study: Leachate

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[4]Artificial turf a health based consumer guide <http://icahn.mssm.edu/files/ISMMS/Assets/Departments/Environmental%20Medicine%20and%20Public%20Health/CEHC%20Consumer%20Guide%20to%20Artificial%20Turf%20May%202017.pdf>

[5]<>http://www.center4research.org/children-athletes-play-toxic-turf-playgrounds/>

[6] <http://www.usatoday.com/story/news/2015/03/15/artificial-turf-health-safety-studies/24727111/ >

EPA statement about Synturf and tire waste in <**http**s://cfpub.epa.gov/si/si_public_file_download.cfm?p_download_id=524979 >

[7] https://theintercept.com/2019/10/08/pfas-chemicals-artificial-turf-soccer/

and Stormwater characteristics
http://www.ct.gov/deep/lib/deep/artificialturf/dep_artificial_turf_report.pdf)[8]

Plastic Pollution: ARTIFICIAL TURF WASTE IS FOREVER. see attached
http://www.recyclingartificialturf.com/what-happens-used-turf : According to synturf removal experts-by the end of 2019, 2500+ fields were replaced, with thousands more every year thereafter, sending more than 100 million square feet of plastic carpet to the land fill. Since about 1/2 the height of the blades fall apart as dust and micro-debris over the life of the carpet- that's almost 50 million square feet of dust and debris spread into soil water and air for those carpets over their lifetime before the rest ends up in the landfill or other dumpsite. The synthetic tire infill adds tons of waste PER FIELD. **Every bit of plastic and tires ever produced will last forever** unless real closed-loop recycling (plastic turf into plastic turf, tires into tires) is done. Which is not yet happening.

Synturf recycling is a myth. Turf Recycling Solutions Inc states**:** *"the reality is that once the field is divvied up into smaller pieces, the chances for recycling are greatly reduced. The other stark reality is that the repurposed market will soon be flooded with product – about 1,000 synthetic turf fields will be removed and landfilled in 2016. That's over 80 million square feet of old {plastic} turf."* The problem has only increased since then**.** GRASS doesn't have this problem.

Cost of Failure and Disposal:
As described above and see attached graphic, ***Synthetic turf fields*** have a set life of 7 to 10 years (sometimes less, depending on usage) and must be replaced due to compaction and worn fibers. Assuming the base is still good, the cost to remove and dispose of and replace the carpet and infill has been approximately $500,000-$800,000. **Synthetic playground surfaces** become brittle and crack up (see photos attached) and must be patched but when tested are often found to be irretrievably hard and must be fully replaced.

With the growing number of used tires and prohibitions for their disposal in landfills, new markets for this toxin-laden waste product are actively being sought. However, as outlined, clearly the use for sports fields and playgrounds is not real recycling- it just brings the landfill to the playfield for a time spreading toxins into the environment and into people before the rest heads back to the landfill or other dumpsite (see: RE the Netherlands Recycling Network lawsuit)[9] with no tracking or responsibility currently required for the toxin-laden waste**.**

Recent reports on PFAS chemicals in and leaching from synthetic turf carpeting make the regulation of its disposal even more important. **Disposal of Synthetic turf is a known and recurrent nightmare that can no longer be ignored, and which producers must be required to address with real, APPROVED, DOCUMENTED solutions.[10]**

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[8] Connecticut Department of Environmental Protection (2010) Artificial Turf Study: Leachate and Stormwater Characteristics. <http://www.ct.gov/deep/lib/deep/artificialturf/dep_artificial_turf_report.pdf>

[9]Tire waste on artificial turf fields: Recycling Network declares 'polder (environmental) crime'
Recycling Network has reported to the Public Prosecutor of large-scale environmental offenses with car tires. "Covering thousands of sports fields with millions of kilos of shredded tires leads to leaching of large amounts of zinc and various other environmental risks. "September 21, 2017 Recycling Network <http://recyclingnetwerk.org/2017/09/21/autobandenafval-op-kunstgrasvelden-recycling-netwerk-doet-aangifte-poldercriminaliteit/ >

[10] https://www.fairwarning.org/2019/12/fields-of-waste-artificial-turf-mess/

Additional Reading:
See www.sierraclub.org/maryland/synthetic-turf

Video of hearing[11]; Waldstreicher speaks about fraud.

<http://www.usatoday.com/story/news/2015/03/15/artificial-turf-health-safety-studies/24727111/ >"You pick up rubber off a field and you don't know what that piece of rubber came from," said health advocate Dr. David Brown, Connecticut's former head of environmental epidemiology and occupational health. "It's not a manufactured item. It's a waste. There isn't quality control."

EPA 2013 letter on **The Use of Recycled Tire Materials on Playgrounds & Synthetic Turf Fields**

- https://www.peer.org/assets/docs/epa/12_23_13_EPA_retraction.pdf
  http://www.epa.gov/nerl/features/tire%20crumbs.html
  http://www.emcmolding.com/uploads/files/file130102132640.pdf

  Netherlands recycling network files suit against toxic recycling of tire waste to playfields
  Car tire waste on artificial turf fields: Recycling Network declares 'polder (environmental) crime' Recycling Network has reported to the Public Prosecutor of large-scale environmental offenses with car tires. "Covering thousands of sports fields with millions of kilos of shredded tires leads to leaching of large amounts of zinc and various other environmental risks." September 21, 2017 Recycling Network Link to this article
  http://recyclingnetwerk.org/2017/09/21/autobandenafval-op-kunstgrasvelden-recycling-netwerk-doet-aangifte-poldercriminaliteit/

  Connecticut Department of Environmental Protection (2010) Artificial Turf Study: Leachate and Stormwater Characteristics.
  http://www.ct.gov/deep/lib/deep/artificialturf/dep_artificial_turf_report.pdf
  …The results from our study appear to be consistent with the results from Kolitzus (2006) and Lim et al (2009), **including the detection of benzothiazole in the stormwater samples**.
  2).....Based on our analysis of the stormwater collected from the artificial turf fields, ….
  conclude that **the zinc in the leachate would exceed applicable water quality standards**. The Norwegian Pollution Control Authority classifies artificial turf runoff as Environmental Quality Class V (**very strongly polluted water**) due to the high concentration of zinc in the leachate. The risk assessment conducted by Norwegian Institute for Water Research (2005) shows that the **concentration of zinc poses a significant local risk of environmental effects in surface water which receives run-off from artificial turf fields**.

[11] http://mgahouse.maryland.gov/mga/play/39e0f1e1-180e-45f4-a4be-360b2ae7f29a/?catalog/03e481c7-8a42-4438-a7da-93ff74bdaa4c

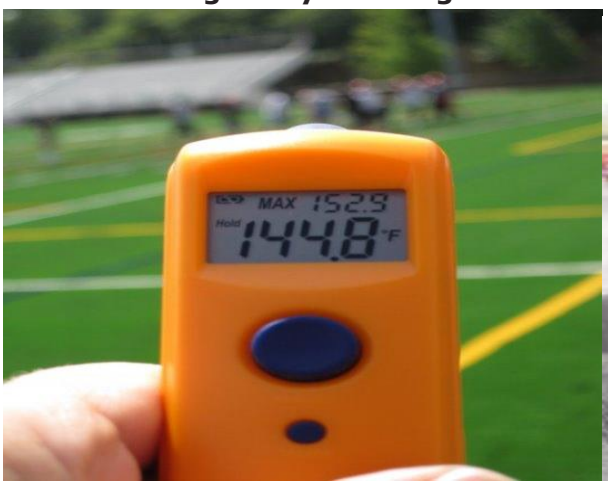
3 Decaying synthetic turf fields Montgomery County MD



www.thesentinel.com/mont/news/local/item/4905-blair-high-school-needs-new-artificial-surface-field

BLAIR HIGH SCHOOL NEW ARTIFICIAL SURFACE FIELD IN 2010

Heat on Montgomery Blair High School Synturf Field in 2010 BEORE tire crumb put on it



Tire crumb spilling from dumpster at Montgomery Blair HS in 2010 when installed

PLAYGROUNDS: Poured in Place colored tire waste pothole imperiling children. note the rock base covered by tire shreds covered by colored glued tire or other rubber granules


The promise "recycling". The reality: Dumping.

Example: Richard Montgomery High School Synthetic Sports Field- disintegrating and loaded with tons of bead-like tire waste infill, is given to hauler to be dumped at a site in White Marsh Maryland without permits as either a dumpsite or a synthetic turf field

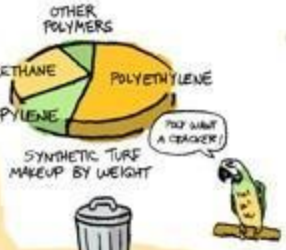
RMHS artificial turf carpet and tire crumbs now reside here. Please ask yourself if this appears to be environmentally responsible. Where will the tire crumb waste be this time next

LIFECYCLE OPTIONS OF SYNTHETIC TURF

SYNTHETIC TURF FIELDS HAVE AN AVERAGE LIFESPAN OF

THE AVERAGE SYNTHETIC TURF FIELD IS **76,800** SQUARE FEET.

... SO WHAT HAPPENS TO THE OLD FIELDS? ONE OF **FOUR** THINGS:



1

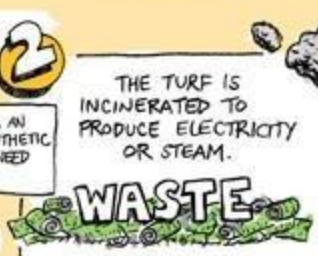
THIS IS BY FAR WHAT HAPPENS TO MOST SYNTHETIC TURF FIELDS. ON AVERAGE, ONE FIELD WEIGHS **42,778 LBS.** AND THE INFILL WEIGHS **422,400 LBS.**

TOGETHER, THAT'S THE SAME AMOUNT OF ANNUAL WASTE PRODUCED BY **267** AMERICANS.

2

BETWEEN 2014 & 2018, AN ESTIMATED 4,336 SYNTHETIC TURF FIELDS WILL NEED TO BE REPLACED.

THE TURF IS INCINERATED TO PRODUCE ELECTRICITY OR STEAM.



HOWEVER... THIS PROCESS PRODUCES **113 TONS** OF eCO_2

3

THE FIELD IS CAREFULLY REMOVED AND REUSED SOMEWHERE ELSE, LIKE A BATTING CAGE.

UNFORTUNATELY, STUDIES SHOW NO MATTER HOW MANY TIMES THE FIELD IS REPURPOSED, IT WILL INEVITABLY END UP IN THE LANDFILL.

4 RECYCLE

BY RECYCLING THE FIELD, IT BECOMES A NEW **RAW MATERIAL** READY TO BE MADE INTO A LIMITLESS NUMBER OF THINGS.

SO WHY DOESN'T EVERYONE RECYCLE?

THERE ARE VERY FEW FACILITIES THAT CAN RECYCLE TURF. IN ADDITION, THE OLD FIELD MUST BE REMOVED BY SPECIALIZED EQUIPMENT AND PROPERLY SEPARATED, OR IT CANNOT BE RECYCLED.

RECYCLING ALSO SAVES **143 BARRELS** OF **CRUDE OIL.**

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